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Areawide Waste Treatment and Water Quality Management Plan for Southern Illinois

Greater Egypt Regional Planning and Development Commission, Carbondale, IL

Prepared for

Environmental Protection Agency, Chicago, IL Region V

Nov 78

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Areawide Waste Treatment and Water Quality Management Plan for Southern Illinois

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208 WATER QUALITY MANAGEMENT
PLAN RECOMMENDATIONS

FOR THE ILLINOIS COUNTIES OF

FRANKLIN, GALLATIN, HAMILTON, HARDIN, JACKSON,
JEFFERSON, PERRY, POPE, SALINE, AND WILLIAMSON

Which Is That Area Lying Within The
Drainage Basins of The Big Muddy River,
The Saline River, Big Creek, Big Grand
Pierre Creek, Lusk Creek, and Peters Creek

Areawide Waste Treatment and Water Quality Management Plan for Southern Illinois

November, 1978

Prepared by the
Greater Egypt Regional Planning
and Development Commission
Carbondale, Illinois
in cooperation with the
Southeastern Illinois Regional
Planning and Development Commission
Harrisburg, Illinois

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Introduction

The Water Pollution Control Act Amendments of 1972 (P.L. 92-500) authorize, under Section 208, the designation of agencies to conduct areawide waste treatment management planning for areas having substantial water quality control problems. Three areas in the State of Illinois were formally recommended for designation by the Governor of Illinois in 1975: the six-county northeastern Illinois region; three of the Illinois counties of metropolitan St. Louis; and the ten-county region in southern Illinois.

The Greater Egypt Regional Planning and Development Commission, acting as the lead agency, and the Southeastern Illinois Regional Planning and Development Commission were designated as the planning agencies to conduct the areawide waste treatment management planning in the ten counties of Franklin, Gallatin, Hamilton, Hardin, Jackson, Jefferson, Perry, Pope, Saline, and Williamson.

The impact of coal mining and agricultural practices on the Region's water quality, together with the influence of municipal and non-mine related industrial effluents, water supplies, and rural sewage, were targeted for major study in the southern Illinois areawide planning project.

The water quality management plan must provide for the following:

(1) The control of Point Source Pollutants--water borne pollutants which are discharged from factories, municipal sewage systems, and other sources at specific locations, through sewer pipes, culverts, artificial channels, or other man-made conveyances.

(2) The control of Non-Point Source Pollutants--water borne pollutants which flow off the land after rainfalls, such as runoff from agricultural lands, mining sites, septic systems, and construction areas.

(3) The development of a Management System which will assure implementation of the Plan.

(4) The establishment of a Continuing Planning Process.

(5) The maximum use of Public Participation throughout the planning program.

The 208 concept is that the analysis of water quality problems and the development of remedial measures should be done simultaneously, in detail, for all sources of pollution. Thus, the Section 208 planning effort considers the degree of pollution abatement necessary to control both point sources of pollution (municipal and industrial waste discharges, for example) and non-point sources of pollution (such as drainage from mine wastes and runnoff from agricultural lands,

construction projects, and timber harvesting operations).

The principal objective of the planning process has been to develop recommendations for pollution abatement actions necessary to meet the Act's 1983 national water quality objective, which specifies that "wherever attainable, an interim goal of water quality which provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water be achieved by July 1, 1983."

A necessary task in support of that objective has been the development of recommendations for implementing the plan. In this regard, the planning process is complete only when the planning agency recommends both what should be done to abate pollution and also who should be responsible for implementing the recommendations in the plan.

The Areawide Waste Treatment and Water Quality Management Plan for Southern Illinois consists of this report and Appendices A through G: a compendium of 17 major documents. This particular report summarizes the project results and plan recommendations identified within the technical documents comprising the appendices. The plan constitutes a joint product of efforts by the project's advisory committees and assigned staff, under the overall direction of the Water Quality Task Force.

Public Participation

The Public Participation Program which undergirds the Southern Illinois 208 planning process has has been based upon a process of initiating and maintaining dialogue with all persons who might be expected to be affected to any degree by the ultimate control and management of the forces which pollute the Region's rivers, lakes, and streams. This process was begun in 1974, before submission of the Project application, and has been continued throughout the course of the program. Three basic principles have been followed:

Provision for direct involvement of persons and organizations who will be directly affected by the water quality management plan.

Provision for continuing and open access to the planning process for any interested person or organization at any time.

Provision for developing awareness of water quality problems and the planning project among the residents of the Region.

A schematic of the Public Participation program elements follows. A conservative and unduplicated count indicates 500 people have been involved in some kind of direct action in helping to shape the Plan and its recommendations through the Water Quality Task Force and the Management Committees, the Clean Water Workshops in each of the ten counties, the four Public Information Meetings, and the Public Hearings, and through work as members of local government units. A conservative and unduplicated count indicates 3000 people have been directly informed of the Project's activity through the work of the Speakers Bureau. More than 2500 pupils, teachers, and school administrations participated in the Project's poster and slogan contests. Untold thousands of the Region's people have been made aware of the water quality program by visiting project displays and exhibits in shopping centers, courthouses, and county fairs and other celebrations; by reading and hearing about the Project through

news stories and through brochures distributed at approximately 100 information stations in the Region; and by participating in activities associated with Clean Streams Month in Southern Illinois.

As a result of the public participation process, the final plan was enhanced and modified in several areas. One area where the plan has been directly affected by public participation was through the Technical Sub-Committees. Three reports have been produced which were not in the original work program. These additional reports were completed at the request of members of the Technical Sub-Committees. The actual report titles and the committee which made the request are as follows: Geology of the Coal-Mining Portion of the Southern Illinois 208 Area and Its Applications to Water Quality Problems, Mine Wastes Committee; Pollution Sources: Agriculture, Land Use/Agriculture Committee; and The 208 Macroinvertebrate Study Report: The Effects of Acid Mine Drainage On Mean Species Diversity in Six Southern Illinois Streams, Mine Wastes Committee.

Two other areas where the public participation process impacted the plan were the public information meetings and the public hearings. Through both the information meetings and the public hearings the County Soil and Water Conservation Districts submitted information which they felt indicated their agencies to be the most qualified group to administer any erosion control programs developed or recommended in the plan. This information weighed heavily in the final recommendation that named them the management agency for erosion control programs.

Another recommendation of the plan was for the formation of county health departments in the counties where none existed. This recommendation received strong support from a member of the general public at one of the public hearings. The person who presented the testimony lived in a county which has no health department, and his home was located in a cluster of homes served by septic systems. A septage problem developed and he was unable to get the state or the county to act on the problem without a county health department or an ordinance covering private sewage disposal systems.

Support for the general direction the plan was taking and some of the specific recommendations was also seen through the county workshops and at presentations made during the speakers bureau program.

Figure 1

208 PUBLIC PARTICIPATION PROGRAM
ELEMENTS IN SOUTHERN ILLINOIS

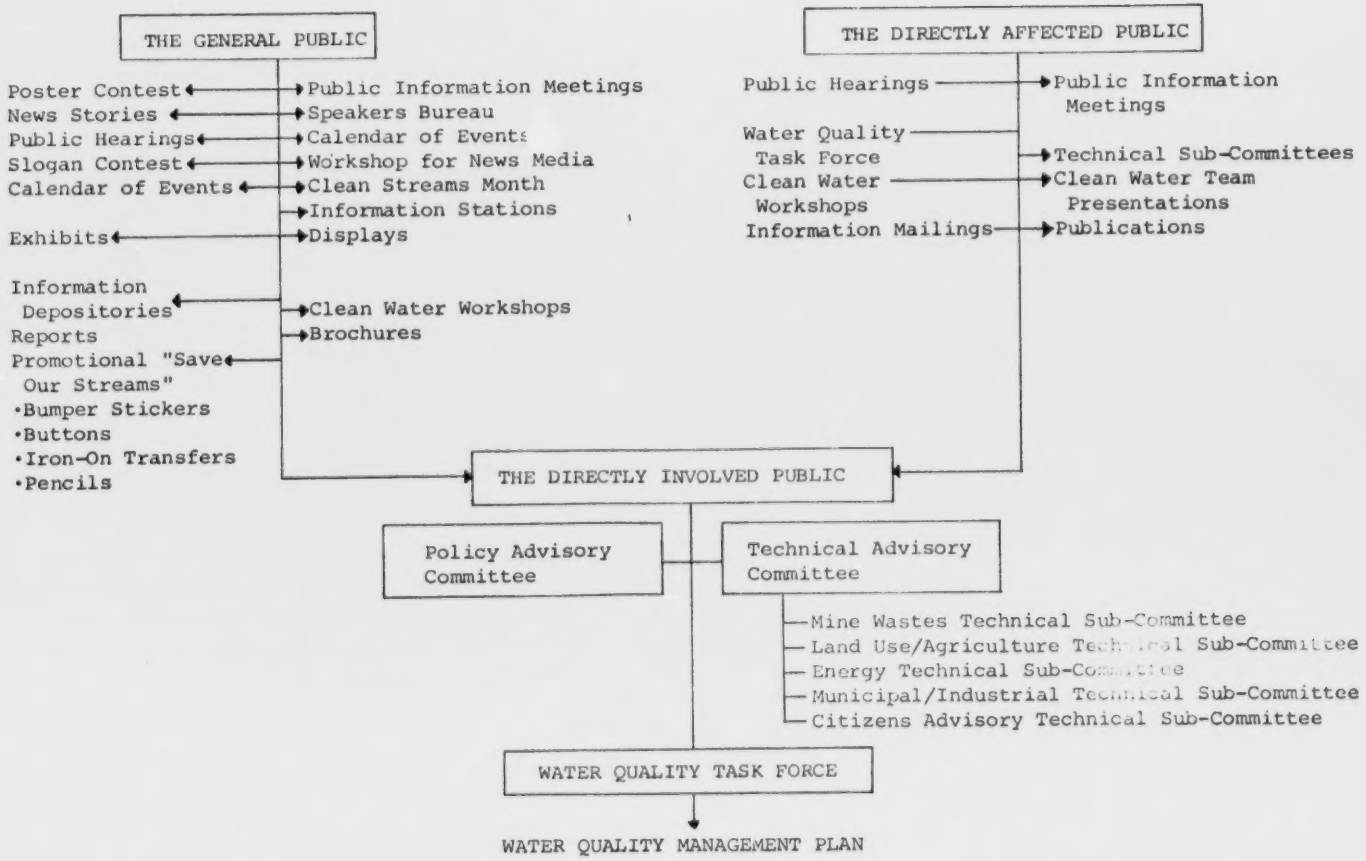

Figure 2

SOUTHERN ILLINOIS 208 DESIGNATED AREA
AND
MAJOR DRAINAGE BASINS

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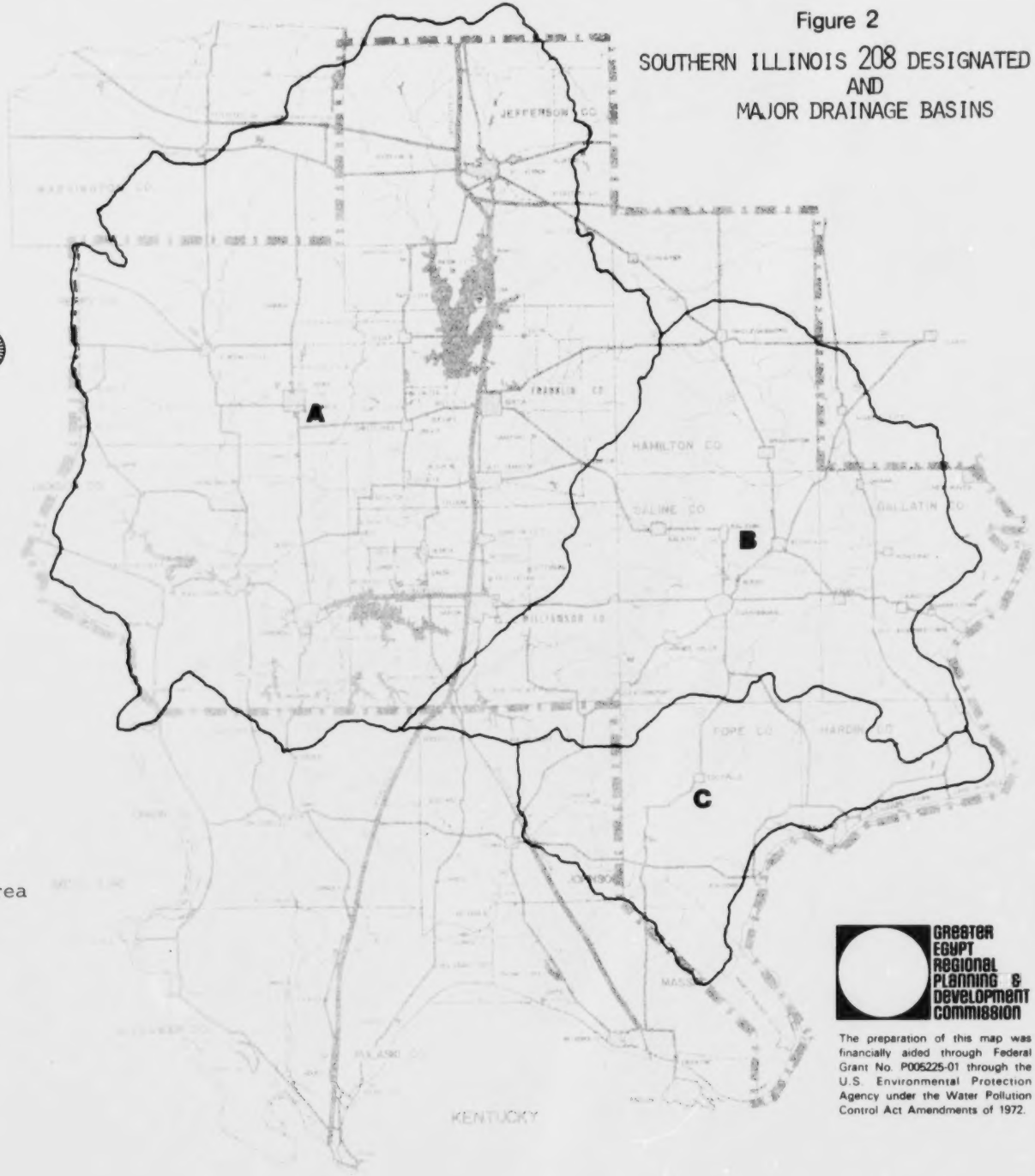
best available copy.



A Big Muddy

B Saline

C Lusk Creek,
Big Grand Pierre,
Big, Peters,
and Bay Creek

208 Designated Area

NORTH

scale in miles
6 4 3 2 1 0 5 10 15

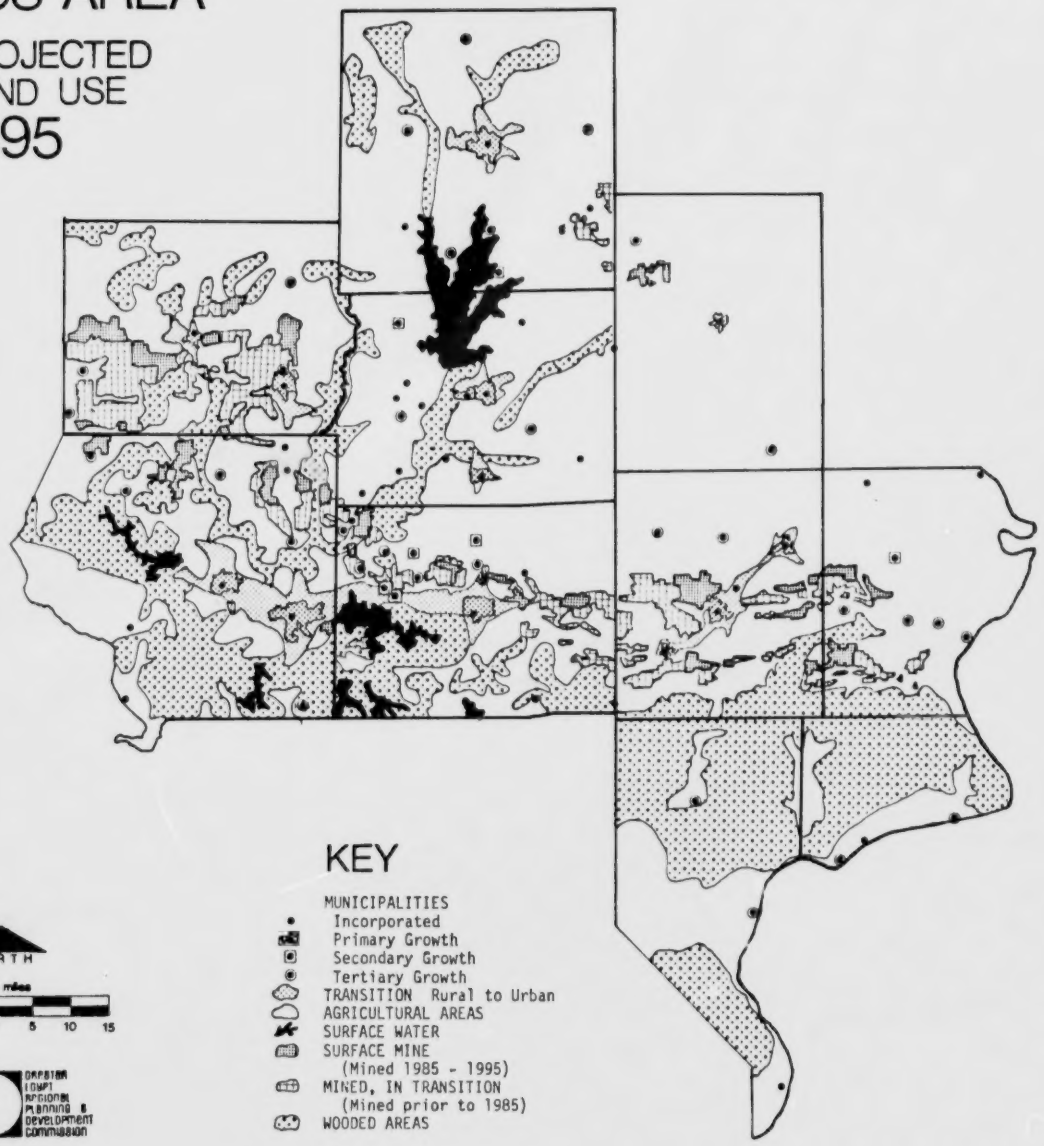
GREATER EGYPT REGIONAL PLANNING & DEVELOPMENT COMMISSION

The preparation of this map was financially aided through Federal Grant No. P005225-01 through the U.S. Environmental Protection Agency under the Water Pollution Control Act Amendments of 1972.

Figure 3

SOUTHERN ILLINOIS 208 AREA

PROJECTED LAND USE 1995



Project Results

MINING

A model, developed from data gathered for the purpose, identified watersheds where cost-effective mine-related corrective measures (blind flushing, partial gob and slurry removal, etc.) would result in improved water quality. Conversely, it also identified specific mine-impacted watersheds where significant improvement is not anticipated, regardless of cost-effective techniques. The study provided basin-level estimates of costs associated with recommended control measures, as well as projected water quality.

The study established that water quality conditions for Crab Orchard Creek, Pond Creek, and Middle Fork-Saline River would worsen, should corrective measures not be undertaken. Water quality problems as a result of sulfate generation will persist in the Beaucoup Creek and South Fork-Saline River watersheds. Inherent overburden characteristics provide an unfavorable background generation of pollutants in the South Fork-Saline, aggravating an existing critical situation caused by pollutant generation from old and/or abandoned refuse and slurry ponds.

A study of mean species diversity of macroinvertebrate animals, which serve as food for fish, indicated that only a few specially adapted species can survive in streams having high levels of acid mine waste pollution. The species favored as food by game fish are present only in less affected stream segments and even there the diversity of species is adversely affected.

POINT SOURCES

Six types of point sources of pollution were identified and studied: (1) Municipal; (2) Industrial; (3) Private; (4) Water Treatment Plant; (5) Feedlot; and (6) Mine Discharges. An in-office methodology was developed with which to ana-

lyze the point sources pollution problem in the 208 area, based on environmental background, natural characteristics, state effluent/ water quality requirements, technology assessment, financial analysis, institutional arrangements, and public concern.

The study determined that municipal and mine discharges are the major types of point sources in the region. Almost all of the point sources presently fail to comply with the state effluent standard. Existing municipal wastewater treatment facilities should be upgraded, and action should be taken to remove the inflow from sewer systems. Close surveillance of mine dischanges is required, in order to evaluate the impact on water quality. A point source plan and the designation of management agencies to implement the plan are needed immediately in order to achieve the water quality goals of the Act.

The point sources impact on water quality varies from source to source. The impact on lakes and intermittant flowing (7-day, 10-year, zero-flow) streams, due to municipal discharges, is significant, especially on lakes. Water quality parameters have been violated as a result of mine discharges as well.

RESIDUAL WASTE

Residual wastes are generated from wastewater treatment facilities (sludge) and septic tank cleaning (septage). The sludge production in the 208 area was estimated and projected for the 20-year planning period. It was determined that the quantity of septic tank residual waste would continue to increase in the future, due to the improved management program.

A number of disposal alternatives are available for municipal sludge, but ultimate disposal of septage is a potential water pollution problem. A thorough investigation will be required, in order to identify the sanitary landfill sites or municipal treatment facilities, where septage should be disposed of safely. It was proposed that the Regional Water Quality Council should develop a plan for utilizing municipal sludge to reclaim the abandoned coal mined areas of the region.

Application of sludge for reclaiming the coal mined land, or for soil conditioning, does degrade the water quality during runoff periods. The spraying of sludge and septage in sanitary landfills may require more attention in the future, since the quantity of such wastes is increasing, as a result of efficient treatment facilities. The leachate from sanitary landfills is a potential threat to the surface and ground water quality of the 208 area.

AGRICULTURE

The agricultural pollution problem most urgently requiring controls is that of critical erosion areas of more than ten tons of soil loss per acre per year within defined water quality areas, i.e., (1) water supply watersheds; (2) secondary water supplies and recreational reservoirs; (3) high water quality streams; and (4) areas of locally severe erosion which is impacting general use streams. The Soil and Water Conservation Districts are recommended to be the water quality management agencies for erosion control implementation within the identified water quality priority areas. They should be designated as county-wide water quality management agencies, with respect to encouraging Best Management Practices

for the following: fertilizer application; pesticide/herbicide application; and livestock wastes.

The most severe impact from agricultural practices in the area is in the form of sedimentation and water-translocated pesticides/herbicides in the area's streams and lakes. The potential is significant for Cedar Lake (dieldrin; lead arsenates) and Rend Lake (sedimentation; nutrient loadings). Crab Orchard Lake and Little Cedar Lake show evidence of heavy sedimentation. Stream sedimentation and excessive siltation also characterize the North Fork Saline River, Rector Creek, Crawford Creek, and Cane Creek.

RURAL SEWAGE

Soil types in the ten-county area were determined to be of almost universally poor septic ability, due to low percolation rates, slope, and/or closeness to bedrock. It was also found that as many as 85% of existing septic systems are failing, due either to inadequacy of the system or to poor maintenance practices. There is a lack of knowledge about installation and maintenance needs and about alternative systems. Health departments in the area are not adequately staffed or are not armed with strong ordinances with which to enforce compliance with health standards in regard to private sewage systems.

This problem is difficult to assess in terms of water quality; however, it is likely that more than half of the existing private systems within the ten-county area are in some stage of malfunction. Instances of seepage to surface, to road ditches, and directly to surface waters are evident in many unsewered subdivisions and rural developments. One water supply reservoir in the area has been declared a serious health hazard as a direct result of septic system failures.

HIGH QUALITY WATERS

The ten-county area was determined to have large acreages of water supply surface waters, many recreation and back-up water supply reservoirs, and some well known high quality flowing waters and lakes, all of which could be classified as non-degradation waters. The quality of these waters is threatened principally by four sources of pollution: (1) erosion from agricultural lands; (2) agricultural chemicals; (3) organic pollution from sewage treatment effluents, animal concentrations, and failing private sewage treatment facilities; and (4) acid drainage from coal mine sites. The impact of these sources is resulting in deteriorating water quality, due to input of acid spoils, poisons, heavy metals, dissolved salts, and nutrient materials that cause eutrophication. In addition, siltation is decreasing the holding capacity of reservoirs.

These degrading influences are seen in varying degrees in all identified waters, but are most seriously threatening to water supply impoundments. High siltation rates, eutrophication, and heavy metals already have caused alarm and have even led to emergency action within the area.

CONSTRUCTION

Some increased suspended solids and siltation problems of a relatively local nature were

determined to be originating with construction activities in the area. The impact on water quality of this problem is difficult to assess. Without specific strategically located and properly timed monitoring efforts, the actual impact of various construction projects cannot be properly evaluated.

Report findings indicate very little impact on lakes and streams. However, heavy, short-term, localized siltation problems, with harmful effect on aquatic habitats, are believed to occur in the absence of well-planned erosion control practices.

FLUORSPAR MINING

The threat to water quality from fluorspar mining was determined to be small, but a potential exists for more impact on water resources, should mining increase in volume or present precautions be relaxed. The impacted area contains some high quality waters. No violations of stream standards were found to be traceable to fluorspar mining and processing activities at present.

HYDROGRAPHIC MODIFICATIONS

It was determined that extensive channel deepening and straightening and channel relocation have occurred in the ten-county area. Even water quality data not specifically gathered for such study shows that water quality has been adversely affected by these practices in the area.

Various studies document the erosion problems resulting from hydrographic modification similar to those in the 208 area. Once the stream bed has been straightened and deepened the stream will begin, by a process of degradation upstream and aggradation downstream, to reestablish a stable stream bed over the entire stream length. This process results in increased degradation of the stream above the channelized portion.

It cannot be precisely determined what portion of the soil erosion problems in the tributary watersheds are a direct result of channelization; however, in the Saline River system, deep silt in the lower reaches, high water velocity in the channelized stretches, and the lack of meandering suggest that the river is now in the process of attempting to stabilize itself via upstream degradation and downstream aggradation.

The channelized portions are also commonly characterized by barren banks, high water temperature, lack of riffle stretches, and a resultant lack of normal aquatic fauna.

PETROLEUM

The major problem resulting from petroleum extraction in the ten-county area was determined to be the erosion and gulleying which occur after salt water overflows and spills have killed vegetation and poisoned the soil, preventing revegetation. These barren areas erode rapidly, carrying suspended solids and salt into streams.

Although current chloride measurements are not frequently in violation of state general use water quality standards, relatively high chloride levels do persist in several streams tributary to the Saline and Big Muddy Rivers. The problems of

erosion and of barren patches of land are difficult, and they remain in need of solution.

SILVICULTURE

Very little current impact was determined to result from silvicultural activies. With continued observance of recommended management practices, and with no great increase of tree harvest from private lands, no measurable or appreciable adverse impact on water quality will occur as a result of silvicultural activity.

Figure 4
Major Sources of Impacts and Potential Impacts on 208 Area Reservoirs

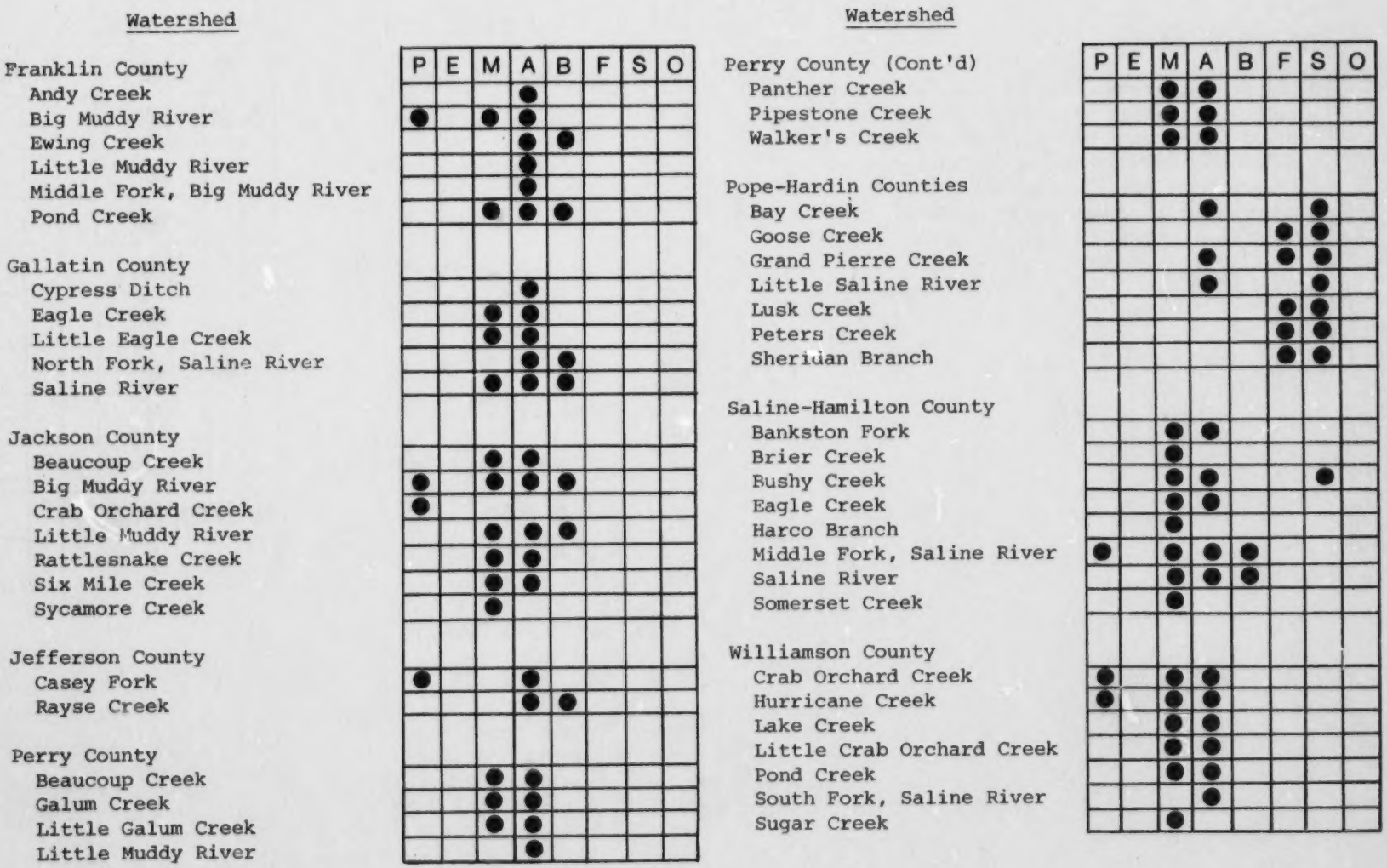
Reservoir	P	E	M	A	B	F	S	O
Cedar Lake		●		●*				●
Crab Orchard Lake	●	●		●				
DuQuoin Reservoir				●				
Eldorado Reservoir				●*				
Harrisburg Reservoir				●				
Kinkaid Lake				●*				
Lake of Egypt		●		●				
Marion Reservoir				●				
Pinckneyville Reservoir				●				
Rend Lake	●	●	●	●	●			
West Frankfort Lakes				●*				

*Limited Acreage

Key

Point Sources -	P
Septic Effluent -	E
Coal Mine Drainage -	M
Agricultural Runoff -	A
Petroleum Wells (Brine) -	B
Fluorspar Mining (Potential) -	F
Silviculture (Potential) -	S
Orchard or Former Orchard Lands -	O

Figure 5
Major Sources of Impacts and Potential
Impacts on Streams in the 208 Area



Water Quality Plan Recommendations

Application be made for funds for reclamation demonstration projects and water quality monitoring under P.L. 95-87. (Appendix C-1, pp. 88)

Counties and municipalities shall use and evaluate the following criteria in establishing lands unsuitable for coal mining pursuant to the enabling legislation of the Surface Mine Control and Reclamation Act of 1977 (P. L. 95-87).

Land Use: consistent with land use plans developed through adopted land use policies and plans required by Housing and Urban Development and other adopted implementive land use controls such as zoning. (P. L. 95-87, Section 522)

Fragile or Historic Lands: lands so designated by the Department of Conservation, and also lands designated by official action of county and municipal governments having historical, cultural, scientific, community, and aesthetic interests. (P. L. 95-87, Section 522)

Prime Agricultural Lands: lands so designated by the Soil Conservation Service. (P. L. 95-87, Section 522)

Natural Hazard Areas: lands so designated as geologically instable by the Illinois State Geological Survey. Lands so designated as flood hazard areas or subject to frequent flood by either the Illinois Department of Transportation, Department of Housing and Urban Development, or the U. S. Army Corps of Engineers. (P. L. 95-87, Section 522)

Non-Degradation Waters: waters that meet concentration levels as set by the EPA, with exception of fecal coli and iron, shall be considered non-degradation waters. In addition, those impoundments, rivers, and streams serving as public water supplies shall also be considered as non-degradation waters. (Appendix B-5, page 30)

The appropriate State agency (Illinois Environmental Protection Agency; Illinois Department of Mines and Minerals; Illinois Institute of Natural Resources) provide adequate water quality monitoring so as to ensure compliance (or identify non-compliance) with existing water quality standards (Illinois Pollution Control Board, Chapters 3 and 4), regulations pursuant to P.L. 95-87, and the applicable terms and conditions of the mining permit. (Appendix B-5, p. 40)

No increases in mining activity occur in the headwaters of Crab Orchard Lake without significant and effective acid mine control measures. (Appendix C-3, Volume I, p. 59; Appendix C-3, Volume II, Chapter 10 p. 10-2)

No reclamation activity for abandoned mined lands in the lower half of the South Fork of the Saline River Basin be currently proposed, since recognized reclamation procedures at this time are not projected to significantly impact the existing poor water quality except in tributary watersheds where a marked improvement in receiving streams may accrue. (Appendix C-3, Volume I, page 58; Volume II, Chapter 10, page 10-1)

Regional Water Quality Council

Recommendation for Regional Water Quality Council

The Greater Egypt Regional Planning and Development Commission and the Southeastern Illinois Regional Planning and Development Commission, acting through their jointly established Regional Water Quality Task Force, recommends to the area's Counties, major municipalities, and Soil and Water Conservation Districts that they mutually create a Regional Water Quality Council. The purpose of the Council is to coordinate the implementation of the 208 areawide plan recommendations while assuring continuation of the 208 areawide planning process.

Membership of Regional Water Quality Council

The membership on the Council is proposed as follows:

1. 208 Area Counties

A. Franklin	C. Hamilton	E. Jackson	G. Perry	I. Saline
B. Gallatin	D. Hardin	F. Jefferson	H. Pope	J. Williamson

2. 208 Area Major Waste Treatment and Water Quality Municipalities

A. Benton	C. DuQuoin	E. Harrisburg	G. Marion	I. Mt. Vernon
B. Carbondale	D. Eldorado	F. Herrin	H. McLeansboro	J. Murphysboro
				K. West Frankfort

3. 208 Area Soil and Water Conservation Districts

A. Franklin	C. Hamilton	E. Jefferson	G. Pope-Hardin	I. Williamson
B. Gallatin	D. Jackson	F. Perry	H. Saline	

4. River Conservancy Districts

A. Kinkaid Reeds Creek Conservancy District	D. Lusk Creek Conservancy District
B. Rend Lake Conservancy District	E. Bay Creek Conservancy District
C. Saline Valley Conservancy District	

The above membership is recommended in that these major agencies have primary responsibility for implementation of the plan recommendations. Other management agencies having a role in the solving the Region's water quality problems are expected to participate in the Council through its advisory committee structure.

Mining

It is the recommendation of the Water Quality Management Program that:

The local review process for the surface mine control act rest with municipal and county governments as management agencies, and that they should utilize such staff resources as they have traditionally relied upon. Consideration of additional staff resources should be made through P.L. 95-87 and the existing Regional Planning Commissions. (Appendix B-6, P. 115)

The Regional Water Quality Council serve to provide regional consistency in review and recommendations to the state regulatory agencies. (Appendix B-6, p. 115)

The preparation and implementation of land use plans and land use controls be the basis of local action for the coal mine regulatory process. (Appendix B-6, 114)

At such time as the regulatory program is adopted by the State of Illinois, amendments to these recommendations may be appropriate.

(Based upon the detailed simulation modeling undertaken by the project consultants, Energy and Environmental Analysis, Inc.)

--removal of gob and slurry within specific stream reaches and watersheds, by backfilling and blind flushing into inactive and subsurface mines located within two miles of current population centers be site evaluated and carried out where technically and economically feasible;

--control of gob and slurry be undertaken so as to achieve the best reasonably obtainable water quality consistent with control cost curves within specific stream reaches and watersheds, using least cost methods, as noted in the following table; site specific measures may be modified, based upon detailed technical and cost study for each location. (Appendix C-3, VolumeI, pp. 70-71; Volume II, Chapter 10, pp. 10-4, 10-5)

Application be made for funds for reclamation demonstration projects and water quality monitoring under P.L. 95-87. (Appendix C-1, pp. 88)

Counties and municipalities shall use and evaluate the following criteria in establishing lands unsuitable for coal mining pursuant to the enabling legislation of the Surface Mine Control and Reclamation Act of 1977 (P. L. 95-87).

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Fragile or Historic Lands: lands so designated by the Department of Conservation, and also lands designated by official action of county and municipal governments having historical, cultural, scientific, community, and aesthetic interests. (P. L. 95-87, Section 522)

Prime Agricultural Lands: lands so designated by the So. iservation Service. (P. L. 95-87, Section 522)

Natural Hazard Areas: lands so designated as geologically instable by the Illinois State Geological Survey. Lands so designated as flood hazard areas or subject to frequent flood by either the Illinois Department of Transportation, Department of Housing and Urban Development, or the U. S. Army Corps of Engineers. (P. L. 95-87, Section 522)

Non-Degradation Waters: waters that meet concentration levels as set by the EPA, with exception of fecal coli and iron, shall be considered non-degradation waters. In addition, those impoundments, rivers, and streams serving as public water supplies shall also be considered as non-degradation waters. (Appendix B-5, page 30)

The appropriate State agency (Illinois Environmental Protection Agency; Illinois Department of Mines and Minerals; Illinois Institute of Natural Resources) provide adequate water quality monitoring so as to ensure compliance (or identify non-compliance) with existing water quality standards (Illinois Pollution Control Board, Chapters 3 and 4), regulations pursuant to P.L. 95-87, and the applicable terms and conditions of the mining permit. (Appendix B-5, p. 40)

No increases in mining activity occur in the headwaters of Crab Orchard Lake without significant and effective acid mine control measures. (Appendix C-3, Volume I, p. 59; Appendix C-3, Volume II, Chapter 10 p. 10-2)

No reclamation activity for abandoned mined lands in the lower half of the South Fork of the Saline River Basin be currently proposed, since recognized reclamation procedures at this time are not projected to significantly impact the existing poor water quality except in tributary watersheds where a marked improvement in receiving streams may accrue. (Appendix C-3, Volume I, page 58; Volume II, Chapter 10, page 10-1)

Greater Egypt Regional Planning and Development Commission

Table 1

Southern Illinois 208 Areawide Mine Waste Program

Summary of Mine Waste Reclamation Program

(All Costs in $1000s)

BASIN NAME	MINE REF.	U/S	MINE DESCRIPTION	GOB (AC.)	SLURRY (AC.)	PLAN A COST	PLAN A METHOD	PLAN B COST	PLAN B METHOD	PLAN C COST	PLAN C METHOD	PLAN D COST	PLAN D METHOD
Pond Creek	130	U	ZIEGLER #4	65.1	93.3	862.1	B	862.1	B	862.1	B	862.1	B
	192	U	OLD BEN #9	48.8	29.7			3305.0	B	3305.0	B		
	193	U	OLD BEN #15	107.0	0.0	767.6	B	767.6	B	767.6	B	767.6	B
	69	U	PEABODY COAL COMPANY	0.9	0.0			6.6	B	6.6	B		
	66	U	BLACK BEAR MINE	0.9	0.0	1.9	B	4.5	A	1.9	B	1.9	B
	67	U	INDEPENDENT SMALL COAL CO.	0.2	0.0	0.8	B	2.8	A	0.8	B	0.8	B
	73	U	OLD BEN COAL COMPANY	20.9	0.0	47.2	B	61.2	A	47.2	B	47.2	B
	74	U	OLD BEN COAL COMPANY	2.0	0.0	4.3	B	4.9	A	4.3	B	4.3	B
	77	U	ST. LOUIS COAL & IRON	14.9	0.0	35.7	B	59.2	A	35.7	B	35.7	B
	128	U	FREEMAN #4	44.3	83.3	514.9	B	1368.3	A	514.9	B	514.9	B
	70	U	PEABODY COAL COMPANY #3	2.9	0.0			56.9	A	16.0	B		
	78	U	COSGRAVE-KLEHAN COAL CO.	3.0	0.0	23.4	A	23.4	A	12.2	B	12.2	B
	119	U	INDEPENDENT SMALL COAL CO.	1.4	0.0	13.0	A	13.0	A	6.8	B	6.8	B
	124	U	FREEMAN #3	32.0	3.0			2302.0	A	814.0	B		
	57	U	* CHIC/WIL/FRANKLIN COAL CO	35.6	0.0			788.8	B	788.8	B		
	104	U	* CONSOLIDATED OF ST. LOUIS	9.0	0.0			334.8	A	88.4	B		
	121	U	ZIEGLER #7	9.0	0.0			226.8	A	64.4	B		
	102	U	* FREEMAN COAL CO.	4.0	0.0			101.6	A	42.9	B		
	52	S	* FORSYTHE ENERGY	3.0	0.0			100.2	A	24.3	B		
	52	S	FORSYTHE ENERGY	26.0	58.0	328.8	B	346.6	A	328.8	B	328.8	B
			SUBTOTAL:			2599.7		11376.1		7734.2		2582.1	
Crab Orchard	56	U	KEYSTONE MINE	5.0	0.0	24.6	A	24.6	A		B	20.8	B
	64	U	SCAULLS ROAKE MINE	1.9	0.0	9.9	B	21.4	A	9.9	B	9.9	B
	65	U	SCRANTON MINE	6.4	0.0	35.3	A	35.3	A	27.2	B	27.2	B
	103	U	INDEPENDENT SMALL COAL CO.	1.0	0.0	9.8	A	9.8	A	5.3	B	5.3	B
	105	U	* INDEPENDENT SMALL COAL CO.	3.0	0.0	19.0	A	19.0	A	13.2	B	13.2	B
	79	U	PICKFORD MINE	1.4	0.0			26.3	A	9.0	B		
	84	U	KNIGHT-TURNER	2.2	0.0	21.6	A	21.6	A	11.3	B	11.3	B
	92	U	BLACK DIAMOND	4.8	0.0			154.2	A	44.7	B		
	63	S	* ASSOCIATED COAL CO.	4.0	0.0			130.0	A	36.9	B		
	111	U	PARIGN BROTHERS	12.9	0.6			671.5	A	153.6	B		
	117	U	NEW BLACK DIAMOND COAL CO.	18.9	3.3			1456.8	A	332.0	B		
	125	U	PEABODY COAL CO.	1.4	0.0			25.9	A	9.0	B		
	90	S	MORGAN UTILITY	0.0	9.0	19.0	A	19.0	A	13.2	B	13.2	B
	63	U	BLUE RIBBON #2	0.2	0.0			1.1	A	0.9	B		
	75	U	INDEPENDENT SMALL COAL CO.	0.8	0.0			4.4	A	3.4	B		
	76	U	UNKNOWN	0.1	0.0			1.2	A	0.6	B		
	89	U	INDEPENDENT SMALL COAL CO.	13.5	0.0	97.0	B	255.3	A	87.0	B	87.0	B
	114	U	INDEPENDENT SMALL COAL CO.	0.6	0.0			11.2	A	4.1	B		
	82	U	INDEPENDENT COAL COMPANY	1.7	0.0			12.0	B	12.0	B		
	115	U	SQUARE DEAL MINE	6.6	0.0	36.8	B	36.8	B	36.8	B	36.8	B
	116	U	B AND J MINE	4.4	0.0			53.6	B	53.6	B		
	68	U	CHICAGO BIG MUDDY COAL CO.	3.7	0.0			59.2	B	59.2	B		
	46	S	FORSYTHE CARTERVILLE	7.0	0.0			254.0	A	67.1	B		
	110	U	TREGONING MINE	0.6	0.0			4.1	B	4.1	B		
	91	S	UTILITY COMPANY	8.0	25.0	173.9	B	390.3	A	173.9	B	173.9	B

METHODS :

A = BACKFILLING AND BLINDFLUSHING INTO ABANDONED UNDERGROUND MINES.

B = DISPOSAL INTO ACTIVE STRIP MINING OPERATIONS.
NUMBERS REFER TO PLANNING TIME STEP WHEN DISPOSAL CAN OCCUR.

C = RUNOFF CAPTURE AND DETENTION IN RESERVOIR.

U-Underground Mine

S-Surface Mine

* Data indicates that these sources may be partially or totally reclaimed. Removal efficiency unknown.

Greater Egypt Regional Planning and Development Commission

Southern Illinois 208 Areawide Mine Waste Program
Summary of Mine Waste Reclamation Program
(All Costs in $1000s)

BASIN NAME	MINE REF.	U/S		MINE DESCRIPTION	JOB (AC.)	SLURRY (AC.)	PLAN A COST	METHOD	PLAN B COST	METHOD	PLAN C COST	METHOD	PLAN D COST	METHOD
	49	U		TAB MINE	0.5	0.0			3.6	B	3.6	B		
	41	U		INDEPENDENT SMALL COAL CO.	0.5	0.0			3.2	B	3.2	B		
	39	U		INDEPENDENT SMALL COAL CO.	3.0	0.0			17.1	B	17.1	B		
	40	U		INDEPENDENT SMALL COAL CO.	2.0	0.0			14.8	B	14.8	B		
				SUBTOTAL:			436.9		3757.3		1227.5		398.6	
South Fork Saline	76	S		AMAX C-C DELTA MINE	83.0	3.0	226.4	B	226.4	B	226.4	B	226.4	B
	80	U		CHANEY & CRESHAM	1.6	0.0	9.1	B	9.1	B	9.1	B	9.1	B
	85	U		OAK GROVE	4.1	0.0	27.0	B	27.0	B	27.0	B	27.0	B
	86	U		STEEL PIPPLE	1.8	0.0	11.8	B	11.8	B	11.8	B	11.8	B
	87	U		INDEPENDENT SMALL COAL CO.	1.9	0.0	10.2	B	10.2	B	10.2	B	10.2	B
	88	U		MITCHEL COAL COMPANY	4.6	0.0	23.4	B	23.4	B	23.4	B	23.4	B
	90	U		CHERRY HILL	3.5	0.0	34.2	B	34.2	B	34.2	B	34.2	B
	93	U	*	MOORE MINE	5.9	0.0	84.4	B	84.4	B	84.4	B	84.4	B
	96	U		CEDAR HILL	5.7	0.0	53.0	B	53.0	B	53.0	B	53.0	B
	97	U		WALNUT VALLEY	1.6	0.0	8.6	B	8.6	B	8.6	B	8.6	B
	106	U		LIBERTY COAL CO.	1.2	0.0	6.3	B	6.3	B	6.3	B	6.3	B
	72	S		VALLEY CORDER MINE	3.0	0.0	28.8	B	28.8	B	28.8	B	28.8	B
	86	S	*	PEABODY MINE	13.0	0.0	170.0	B	170.0	B	170.0	B	170.0	B
	86	S		PEABODY MINE	39.0	0.0	509.9	B	509.9	B	590.9	B	509.9	B
	103	S	*	PEABODY C-C	0.0	55.0	220.0	A	220.0	A	220.0	A	220.0	A
	76	S	*	AMAX C-C DELTA MINE	2.0	0.0			58.2	A	52.2	A		
	85	S		LAMAR C-C	29.0	0.0			844.7	A	844.7	A		
	76	S		AMAX C-C LOWER DELTA MINE	19.0	0.0	171.5	B	171.5	B	171.5	B	171.5	B
	97	S		BLUEBIRD C-C	85.0	18.0	72.0	B	72.0	B	72.0	B	72.0	B
	97	S		BLUEBIRD C-C	7.0	0.0	207.8	A	207.8	A	207.8	A	207.8	A
	103	S	*	PEABODY C-C	0.0	1.0	4.0	A	4.0	A	4.0	A	4.0	A
	112	S		SAXTON C-C	23.3	16.0			283.8	B	283.8	B		
	113	S		SAXTON C-C	0.0	17.0	68.0	A	68.0	A	68.0	A	68.0	A
	103	S	*	PEABODY C-C	0.0	16.0	64.0	A	64.0	A	64.0	A	64.0	A
	139	U	*	INDEPENDENT SMALL COAL CO.	4.4	0.0			37.8	B	37.8	B		
	140	U		INDEPENDENT SMALL COAL CO.	2.3	0.0			12.2	B	12.2	B		
	155	U		WASSON #2	0.8	0.0			3.8	B	3.8	B		
	160	U		WASSON #2	6.5	0.0			26.6	B	26.6	B		
	95	S		SAHARA C-C	41.0	71.0	284.0	B	284.0	B	284.0	B	284.0	B
	97	S		BLUEBIRD C-C	24.0	16.0	64.0	B	64.0	B	64.0	B	64.0	B
	96	S		SAHARA C-C	37.0	0.0	1077.7	A	1077.7	A	1077.7	A	1077.7	A
	148	U		INDEPENDENT SMALL COAL CO.	2.0	0.0			15.7	A	15.7	A		
	103	S		PEABODY COAL CO.	54.0	27.0	100.0	B	100.0	B	100.0	B	100.0	B
				SUBTOTAL:			3536.1		4818.9		4818.9		3536.1	
Middle Fork Saline	75	S		AMAX DELTA MINE	1.0	0.0			8.2	B	8.2	B		
	108	U		SUNNYBROOK	5.3	0.0	32.5	B	33.5	B	33.5	B	33.5	B
	76	S	*	AMAX DELTA MINE	28.0	0.0			307.4	B	307.4	B		
	74	S	*	PUTNEY BROTHERS MINE	3.0	29.0	142.7	B	142.7	B	142.7	B	147.7	B
	76	S	*	AMAX DELTA MINE	0.0	20.0	80.0	B	80.0	A	80.0	A	80.0	B
	62	U		A.O. SINGERL	3.9	0.0			60.9	A	60.9	A		

METHODS :
A = BACKFILLING AND BLINDFLUSHING INTO ABANDONED UNDERGROUND MINES.
B = DISPOSAL INTO ACTIVE STRIP MINING OPERATIONS.
NUMBERS REFER TO PLANNING TIME STEP WHEN DISPOSAL CAN OCCUR.
C = RUNOFF CAPTURE AND DETENTION IN RESERVOIR.

*Data indicates that these sources may be partially or totally reclaimed. Removal efficiency unknown.

U-Underground Mine
S-Surface Mine

Greater Egypt Regional Planning and Development Commission

Southern Illinois 208 Areawide Mine Waste Program
Summary of Mine Waste Reclamation Program
(All Costs in $1000s)

BASIN NAME	MINE REF.	U/S	MINE DESCRIPTION	GOB (AC.)	SLURRY (AC.)	PLAN A COST	PLAN A METHOD	PLAN B COST	PLAN B METHOD	PLAN C COST	PLAN C METHOD	PLAN D COST	PLAN D METHOD
Middle Fork Saline	83	U	ENSMINGER	0.3	1.0			1.4	B	1.4	B		
	91	U	INDEPENDENT SMALL COAL CO.	0.3	1.0			1.7	B	1.7	B		
	94	U	INDEPENDENT SMALL COAL CO.	3.1	8.0	20.8	B	20.8	B	20.8	B	20.8	B
	100	U	GREAT VALLEY	2.9	8.0			28.8	B	28.8	B		
	101	U	GREEN VALLEY	0.1	0.0			0.5	B	0.5	B		
	113	U	INDEPENDENT SMALL COAL CO.	1.8	0.0	17.7	A	17.7	A	17.7	A	17.7	A
	120	U	NEW SUPERIOR	1.3	0.0	6.0	B	6.0	B	6.0	B	6.0	B
	123	U	TURNER #1	4.7	1.1			93.1	B	93.1	B		
	132	U	HARRISBURG #1	29.0	0.0			844.7	A	844.7	A		
	81	S	AMAX DELTA MINE	6.0	0.0			70.1	B	70.1	B		
	78	S	AMAX DELTA MINE	2.0	0.0			27.5	B	27.5	B		
	99	U	INDEPENDENT SMALL COAL CO.	5.6	0.0	36.9	B	36.9	B	36.9	B	36.9	B
	94	S	SAHARA C-C	20.0	11.0	249.6	B	249.6	B	249.6	B	249.6	B
	96	S	SAHARA C-C	213.0	190.0	3277.1	B	3277.1	B	3277.1	B	3277.1	B
	96	S	SAHARA C-C	9.0	6.0	110.3	B	110.3	B	110.3	B	110.3	B
	94	S	SAHARA C-C	42.0	10.0	489.4	B	489.4	B	489.4	B	489.4	B
	96	S	SAHARA C-C	34.0	10.0	143.6	B	143.6	B	143.6	B	143.6	B
	163	U	PEABODY #40	3.6	0.0			223.2	A	223.2	A		
	164	U	PEABODY #40	9.1	0.0	38.8	A	38.8	A	38.8	A	398.3	A
	96	S	* SAHARA C-C	14.0	6.0			138.1	B	138.1	B		
	150	U	*PEABODY #47	117.3	0.0			3795.6	B	3795.6	B		
	157	U	*SAHARA #10	3.1	0.0			13.1	B	13.1	B		
	149	U	INDEPENDENT SMALL COAL CO.	1.0	0.0			5.2	B	5.2	B		
	153	U	*SAHARA COAL CO.	9.0	0.0			50.5	B	50.5	B		
	154	U	*SAHARA COAL CO.	1.0	0.0			5.6	B	5.6	B		
	151	U	O'GARA #12	22.0	0.0			110.0	B	110.0	B		
	152	U	O'GARA #12	5.6	0.0			166.4	B	166.4	B		
	159	U	*WASSON #1	17.5	0.0			84.1	B	84.1	B		
	161	U	O'GARA #1	10.6	0.0			49.2	B	49.2	B		
	158	U	*BANKSTON CREEK COAL CO.	4.6	0.0			20.7	B	20.7	B		
	116	S	BANKSTON CREEK COLLERIES	10.0	0.0			292.7	A	292.7	A		
	79	S	AMAX DELTA MINE	2.0	0.0			22.0	B	22.0	B		
	111	S	BLUEBIRD COAL CO.	7.0	0.0			69.0	B	69.0	B		
			SUBTOTAL:			4649.4		11136.1		11136.1		4649.4	

METHODS :
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C = RUNOFF CAPTURE AND DETENTION IN RESERVOIR.
U-Underground Mine
S-Surface Mine

*Data indicates that these sources may be partially or totally reclaimed. Removal efficiency unknown.

The Illinois Institute for Environmental Quality be requested by the Regional Water Quality Council to conduct research designed to find innovative and more cost effective ways to deal with such severe acid mine waste drainage as is found in the lower South Fork of the Saline River Basin.

The Greater Egypt Regional Planning and Development Commission maintain and update the mine wastewater quality and cost optimization models for use in the evaluation of proposed mining and reclamation plans pursuant to P. L. 95-87.

Research and demonstration projects related to the application of sludge materials as a potential agent for long-term spoil stablization be actively encouraged by the Regional Water Quality Council. (Appendix A-1, p. 42)

The four plan alternatives as presented in the table are defined as follows: Plan A represents the best reasonable, and attainable water quality as defined by the analysis of the water quality vs. control level curves using backfilling and blind flushing as a preferred method around population centers, and the least cost method otherwise. Backfilling and blind flushing was considered to be preferrable and economically realistic around population centers because it represented dual benefits: 1) reduction of mining pollutants; 2) some measure of subsidence control. Reasonable was defined as a unit cost not to exceed two times that of the least expensive alternative. Plan B represents 100% "gob" and slurry control of existing sources coupled with subsidence control around all population centers. Subsidence control was considered without regard to cost within the two mile radius around population centers. Plan C represents a level of 100% control throughout each basin using the least cost method. Plan D represents the best reasonable, attainable water quality levels as defined by Plan A coupled with the least cost control alternatives. Plan A is the recommended alternative for implementation in the Southern Illinois 208 area. (Appendix C-3, Volume I, pages 70-71; Volume II, Chapter 10, pages 10-4, 10-5)

The preceding table, Southern Illinois 208 Areawide Mine Waste Program Summary of Mine Waste Reclamation Program, was taken from pages 73-75, Volume 1, Summary Report and pages 10-8 through 10-10, Volume II, Technical Report for the Southern Illinois 208 Mine Waste Control Program. These reports were submitted to the Greater Egypt Regional Planning and Development Commission by Energy and Environmental Analysis, Inc. in March 1978.

The Regional Water Quality Council review National Pollution Discharge Elimination System and other permits to be issued by the State of Illinois, including specific water quality monitoring from current and proposed coal mining activities data and other related data.

The Regional Water Quality Council, together with the Regional Planning and Development Commissions and other appropriate agencies, undertake an analysis of potential water quality impact of large energy conversion facilities.

Annual Progress Reviews shall be conducted by the Regional Water Quality Council.

Point Sources

It is the recommendation of the Water Quality Management Program that:

The municipalities and selected water and sanitary districts be designated as the management agencies for their respective service areas as identified in (1) the individual Sec. 201 facility plans; (2) the individual municipal wastewater needs analysis studies and (3) areawide management strategy report. (Appendix A-2, pages 43-44)

The Priority Ranking and Capital Scheduling identified in the Municipal Wastewater Needs and Capital Scheduling Report (1978), be pursued as the major guide for the scheduling and funding of the municipal facilities within the 208 area. It should be noted that of the 81 communities, 62 are scheduled for funding by 1983, while 17 are schedule between 1983 and 1995 (no action is recommended for two municipalities). (Appendix A-2; Appendix B, pages 32-34)

The Regional Water Quality Council, in cooperation with the management agencies, conduct an evaluation of those facilities interpreted as being "implemented" during the first year of the continuing planning program, for purposes of: (1) evaluating the effectiveness of meeting effluent and stream water quality standards; (2) evaluating the effectiveness of resolving the original water quality and/or service area problems; (3) identifying any water quality or system problems which may have occurred during the implementation process; (4) developing solutions and plan modifications to resolve operational or unknown loading problems; and (5) conducting the annual planning update. (Appendix A-2, p. 42)

For those facilities scheduled for capital construction after 1980, the new decennial census of population be utilized to evaluate the accuracy of the current population projections and to redetermine, where necessary, service capabilities. (Appendix A-2; Appendix A, pages 1-81)

Table 2

MUNICIPAL WASTEWATER FACILITIES:
PRIORITY RANKING AND CAPITAL SCHEDULING

Priority Rank[1]	IEPA Priority Rank[2]	Community	Estimated Capital Costs	Construction Phase	Priority Rank[1]	IEPA Priority Rank[2]	Community	Estimated Capital Costs	Construction Phase
1	0254	Willisville	364,000	1981-83	20	0091	Sesser	2,101,370	1978-80
2	0428	Carterville	851,100[3]	1980-82	22	0770	Broughton	349,200	1978-80
3	0679	Ridgway	549,360	1981-83	23	*	Cutler	145,500	1981-83
3	0886	Equality	1,202,300	1978-80	23	1062	Pinckneyville	463,900[3]	1981-83
5	0669	Dahlgren	442,000	1978	25	*	Nason City	628,956	1986-89
6	0147	Eldorado	2,835,634	1978-80	25	*	Whiteash	331,020	1987-90
7	0116	Mt. Vernon[4]	7,059,933[3]	1976-80	27	0185	Carrier Mills	148,367[3]	1979-81
7	*	Murphysboro	2,180,000	1977	27	0405	Harrisburg	1,502,200[3]	1981-83
9	0290	Energy	N.A.	1981-83	27	0708	Vergennes	539,000	1988-97
10	*	Spillertown	400,000[3]	1980-82	30	0638	Pittsburg	928,000	1978-80
11	0448	Bonnie	930,676	1978-80	30	0892	Eddyville	299,200	1989-92
11	0510	Raleigh	738,000	1984-87	32	0681	Bluford	790,000	1976
11	0869	Stonefort	No Action		32	0753	Campbell Hill	155,100	1981-83
14	0732	Omaha	690,000	1985-88	34	0356	Waltonville	561,080	1981-83
15	0722	DeSoto	323,900[3]	1981-83	34	0124	Carbondale[4]	4,407,000	1978-80
16	0184	Shawneetown	2,025,400	1979-81	36	*	Hanaford	614,500	
17	0924	Cave-In-Rock	715,750	1978-80	37	0541	Old Shawneetown	303,800	1981-83
17	0363	Ina	941,039	1978-80	38	*	Makanda	539,000	1990-93
19	0616	Ava	141,800	1981-83	38	*	St. Johns	N.A.	1991-94
20	0056	McLeansboro	2,276,859	1978-80	40	0340	Hurst	356,000	1978-80

Priority Rank[1]	Priority Rank[2]	Community	Estimated Capital Costs	Construction Phase
40	0036	Marion[4]	2,990,000	1976-79
42	0453	Buckner	1,062,338	1981-83
42	0187	Herrin	3,764,500[3]	1979-81
44	*	New Haven	141,000[3]	1981-83
45	0544	Dowell	930,000	1977-79
46	0592	North City	508,235	1991-94
47	0534	Freeman Spur	885,000	1981-83
47	0724	Muddy	202,100	1981-83
49	*	Macedonia	No Action	
49	1024	West City	1,080,000	1978
51	0167	Benton[4]	1,026,000[3]	1979-81
51	1092	DuQuoin	418,400[3]	1981-83
51	*	West Frankfort	1,426,060	1981-83
54	*	Crainville	N.A.	1981-83
55	0763	Belle Rive	645,424	1992 95
55	*	Cambria	N.A.	1981-83
55	0345	Elkville	360,000	1980-82
58	*	Orient	823,000	1993-95
59	0773	Junction[4]	414,000	1993-95
59	0381	Tamaroa	850,000	1977

Priority Rank[1]	IEPA Priority Rank[2]	Community	Estimated Capital Costs	Construction Phase
61	*	Colp	131,300	1981-83
62	0884	Golconda	141,000	1981-83
63	0182	Creal Springs	132,000	1980-82
64	0232	Christopher	2,112,055	1980-82
65	0591	Bush	69,400	1982-84
65	0354	Galatia	626,000	1976
67	0063	Johnston City	3,182,458	1978-80
67	0371	Woodlawn	351,357	1975
69	0830	Elizabethtown	227,392	1981-83
70	*	Gorham	115,000	1981-83
71	*	Hamletsburg	112,000	1993-95
72	0268	Thompsonville	444,900[3]	1974
72	1077	Ewing	1,801,909	1977-79
74	0500	Rosiclare	242,000[3]	1981-83
75	0979	Dix	83,800[3]	1981-83
75	0873	Royalton	276,200[3]	1981-83
77	*	Valier	129,277	1981-83
78	0746	Zeigler[4]	257,000[3]	1981-83
79	0971	Grand Tower[4]	159,000	1981-83
80	*	Belle Prairie	97,000	1993-95
81	*	Urbain	N.A.	1993-95

Legend

[1]Priority Ranking done by Planning Commission staff for the ten-county 208 area Water Quality Program.

[2]Priority Ranking taken from IEPA 1979 Wastewater Treatment Facilities Municipal Project Priority List.

[3]Applicant estimated cost.

[4]Where a community has more than one project and therefore more than one priority number the lowest number was illustrated in this table.

*Community not listed on 1979 IEPA Priority List

N.A.-Cost Estimates are not available.

Table 3

DESIGNATION DETAIL FOR FACILITY PLANNING AREAS

Facility Planning Area	Municipalities or Water District	Status	Lead Planning Agency	Responsible For: Collection	Transport	Treatment
Ava	Ava	Completed MNA	Ava	X	X	X
Belle Prairie City	Belle Prairie City	Completed MNA	Belle Prairie	Non-Traditional Sytem Proposed		
Belle Rive	Belle Rive	Completed MNA	Belle Rive	X	X	X
Benton	Benton	Step 1 Study in Process	Benton	X	X	X
	West City	Facility Constructed 1977	Benton	X	X	
Bluford	Bluford	Facility Constructed 1976	Bluford	X	X	X
Broughton	Broughton	Completed MNA Plus Health Hazard Grant Status	Broughton	X	X	X
Campbell Hill	Campbell Hill	Completed MNA	Campbell Hill	X	X	X
Carbondale	Carbondale	Facility Under Construction	Carbondale	X	X	X
Carrier Mills	Carrier Mills	Step 1 Study in Process	Carrier Mills	X	X	X
Carterville	Carterville	Step 1 Study in Process	Carterville	X	X	X
	Cambria	Step 1 Study in Process	Carterville	X	X	X
	Crainville	Step 1 Study in Process	Carterville	X	X	X
Cave-In-Rock	Cave-In-Rock	Facility Under Construction	Cave-in-Rock	X	X	X

Facility Planning Area	Municipalities or Water District	Status	Lead Planning Agency	Responsible For: Collection	Transport	Treatment
Christopher	Christopher	Completed Step 1	Christopher	X	X	X
	Urbain	Completed Step 1	Christopher	Considered contiguous with City of Christopher		
	Valier	Completed Step 1	Christopher	X	X	X
	Buckner	Completed Step 1	Christopher	X	X	
	North City	Completed Step 1	Christopher	X	X	
Colp	Colp	Completed MNA	Colp	X	X	X
Creal Springs	Creal Springs	Completed Step 1	Creal Springs	X	X	X
Cutler	Cutler	Completed MNA	Cutler	X	X	X
Dahlgren	Dahlgren	Facility Under Construction	Dahlgren	X	X	X
DeSoto	DeSoto	Step 1 Study in Process	DeSoto	X	X	X
Dix	Dix	Step 1 Study in Process	Dix	X	X	X
DuQuoin	DuQuoin	N/A	DuQuoin	X	X	X
	St. Johns	N/A	DuQuoin	N/A	N/A	N/A
Eddyville	Eddyville	Completed MNA	Eddyville	X	X	X
Eldorado	Eldorado	Completed Step 1	Eldorado	X	X	X
Elizabethtown	Elizabethtown	Completed Step 1	Elizabethtown	X	X	X
Elkville	Elkville	Completed Step 1	Elkville	X	X	X
	Dowell	Health Hazard Grant Status	Elkville	X	X	X
	Hallidayboro	No Action	Elkville	No Action Alternative		

Facility Planning Area	Municipalities or Water District	Status	Lead Planning Agency	Responsible For: Collection	Transport	Treatment
Equality	Equality	Completed MNA Plus Health Hazard Grant Status	Equality	X	X	X
Freeman Spur	Freeman Spur	Completed Step 1	Freeman Spur	X	X	X
Galatia	Galatia	Facility Constructed 1976	Galatia	X	X	X
Golconda	Golconda	Completed MNA	Golconda	X	X	X
Gorham	Gorham	Completed MNA	Gorham	X	X	X
Grand Tower	Grand Tower	Completed MNA	Grand Tower	X	X	X
Hamletsburg	Hamletsburg	Completed MNA	Hamletsburg	Non-Traditional System Proposed		
Hanaford	Hanaford	Completed MNA	Hanaford	X	X	X
Harrisburg	Harrisburg	Step 1 Study in Process	Harrisburg	X	X	X
	Muddy	Facility Constructed 1976	Harrisburg	X	X	X
Herrin	Herrin	Step 1 Study in Process	Herrin	X	X	X
	Energy	Step 1 Study in Process	Herrin	X	X	X
Hurst	Hurst	Completed Step 1	Hurst	X	X	X
	Bush	Completed Step 1	Hurst	X	X	
Johnston City	Johnston City	Completed Step 1	Johnston City	X	X	X
	Whiteash	Completed Step 1	Johnston City	X	X	

Facility Planning Area	Municipalities or Water District	Status	Lead Planning Agency	Responsible For: Collection	Transport	Treatment
Junction	Junction	Completed MNA	Junction	X	X	X
Lake of Egypt	Lake of Egypt	Health Hazard Grant Status	Lake of Egypt	X	X	X
Macedonia	Macedonia	Completed MNA	Macedonia	Municipal Septic Tank Cleaning Service		
Makanda	Makanda	Completed MNA	Makanda	X	X	X
Marion	Marion	Facility Constructed 1978	Marion	X	X	X
	Spillertown	Completed Step 1	Marion	X	X	
McLeansboro	McLeansboro	Completed Step 1	McLeansboro	X	X	X
Mt. Vernon	Mt. Vernon	Facility Under Construction	Mt. Vernon	X	X	X
Murphysboro	Murphysboro	Completed MNA	Murphysboro	X	X	X
New Haven	New Haven	N/A	New Haven	N/A	N/A	N/A
Omaha	Omaha	Completed MNA	Omaha	X	X	X
Pinckneyville	Pinckneyville	Step 1 Study in Process	Pinckneyville	X	X	X
Pittsburg	Pittsburg	Completed MNA Plus Health Hazard Grant Status	Pittsburg	X	X	X
Raleigh	Raleigh	Completed Step 1	Raleigh	X	X	X

Facility Planning Area	Municipalities or Water District	Status	Lead Planning Agency	Responsible For: Collection	Transport	Treatment
Rend Lake-East	Rend Lake-East	Completed Step 1	Rend Lake-East	X	X	
	Bonnie	Completed Step 1	Rend Lake-East	X	X	X
	Ewing	Completed Step 1	Rend Lake-East	X	X	X
	Ina	Facility Under Construction	Rend Lake-East	X	X	X
Rend Lake-North	Rend Lake-North	Completed MNA	Rend Lake-North	Not Applicable		
	Nason	Completed MNA	Rend Lake-North	Municipal Septic Tank Cleaning Service		
Ridgway	Ridgway	Completed MNA	Ridgway	X	X	X
Rosiclare	Rosiclare	Step 1 Study in Process	Rosiclare	X	X	X
Royalton	Royalton	Step 1 Study in Process	Royalton	X	X	X
Sesser	Sesser	Completed Step 1	Sesser	X	X	X
Shawneetown	Shawneetown	Completed Step 1	Shawneetown	X	X	X
	Old Shawneetown	Completed Step 1	Shawneetown	X	X	
Stonefort	Stonefort	Completed MNA	Stonefort	Municipal Septic Tank Cleaning Service		
Tamaroa	Tamaroa	Facility Constructed 1977	Tamaroa	X	X	X
Thompsonville	Thompsonville	Facility Constructed 1974	Thompsonville	X	X	X
Vergennes	Vergennes	Completed MNA	Vergennes	Non-Traditional System Proposed		
Waltonville	Waltonville	Completed Step 1	Waltonville	X	X	X

Facility Planning Area	Municipalities or Water District	Status	Lead Planning Agency	Responsible For: Collection	Transport	Treatment
West Frankfort	West Frankfort	Completed MNA	West Frankfort	X	X	X
	Orient	Completed MNA	West Frankfort	X	X	
West Rend Lake	West Rend Lake	N/A	West Rend Lake	N/A	N/A	N/A
Willisville	Willisville	Completed Step 1	Willisville	X	X	X
Woodlawn	Woodlawn	Facility Constructed 1975	Woodlawn	X	X	X
Zeigler	Zeigler	Completed Step 1	Zeigler	X	X	X

MNA - Municipal Needs Analysis Reports completed for Greater Egypt Regional Planning and Development Commission under 208 Water Quality Management Program.

Steps 1, 2, 3 - conducted under Section 201 of P. L. 92-500

N/A - No studies available on the FPA's at present.

Where lead management agencies have been identified in potential areas of regionalization, and both currently possess existing sewer service systems, no further capital scheduling occur in that area for the secondary unit without justification, and the concurrence of the lead agency. (Appendix A-2; Appendix B, page 1)

Land use controls through zoning ordinances and subdivision ordinances be enacted and implemented by the municipal management agencies, up to 1½ miles from their corporate boundaries, in order to align growth patterns with major interceptor and trunk line extension scheduling. (Appendix A-2, pages 24-25)

Revised effluent standards be established by the Illinois Pollution Control Board for several parameters (Fecal coli, Biochemical Oxygen Demand, suspended solids, iron, and ammonia nitrogren) for 7-day, 10-year, zero flow streams (the Illinois Environmental Protection Agency's proposed effluent standards may be beneficial to the area's communities in meeting the State effluent requirements). Appendix A-1, pages 24-25)

Mine discharges be monitored periodically, to evaluate the impact on regional waters. After thorough investigation, a separate plan for point source mine discharges should be developed and implemented. (Appendix A-1, pages 101-106)

The water treatment plant discharges be controlled and disposed of properly. The management agency should comply with the National Pollution Discharge Elimination System permit limitation. (Appendix A-1, pages 89-94)

Private wastewater treatment facilities be upgraded so that they can meet the State effluent requirements. Regionalization potential also should be explored, in order to reduce the number of discharges in the region. (Appendix A-1, p. 77)

Sewer service not be extended outside the existing municipal boundaries, without annexation or intergovernmental agreement with the responsible agency. (Appendix A-2, p. 52)

The management agencies operate the wastewater facilities to their maximum efficiency. Operators' training, conservation practices, and regulatory programs should be developed, to assure that proper operation and maintenance requirements of the system will be fulfilled. (Appendix A-2, p. 52)

All the area's unsewered communities should be funded for the 201 Step 1 grant. The 201 studies should conduct a detailed field study to evaluate the possibility of implementating on-site systems in the area as an alternative to the proposed centralized sewer system. The study should consider the availability of 85% federal grants for innovative (on-site) systems, and a higher priority ranking on the state list for such alternatives. If the 201 Step I study determines that on-site systems are feasible (economically and technically) in the unsewered municipal areas, then the community should implement the on-site alternative to resolve the wastewater disposal problem. (Appendix A-2, p. 25)

Those municipalities which are not on the Illinois Environmental Protection Agency's FY 77 priority list apply for 201 grants. These applications should be updated each year, regardless of grant status. (Appendix A-2, p. 52)

Annual Progress Reviews in the ara of Point Sources be conducted by the Regional Water Quality Council.

Residual Waste

It is the recommendation of the Water Quality Management Program that:

The Regional Water Quality Council develop a plan to utilize the sludge generated from wastewater treatment facilities in reclaiming coal mined land of the 208 area. (Appendix A-1, p. 42)

The Regional Water Quality Council identify the ultimate sludge and septage disposal sites. The Council should also identify mined lands reclamation sites for consideration in sludge application for long-term spoil and refuse stabilization. (Appendix A-1, p. 42)

Expansion and enforcement of the existing regulation related to sludge management (including residue from septic tank cleaning) be reviewed by the Regional Water Quality Council. The ultimate sludge disposal sites for such uses as sanitary landfill, soil conditioning and lagooning should be monitored to protect the quality of surface water and ground water. (Appendix A-2, p. 46)

Annual Progress Reviews in the area of Residual Waste shall be conducted by the Regional Water Quality Council.

Nonpoint Sources: Agriculture

It is the recommendation of the Water Quality Management Program that:

The areas most urgently needing agricultural erosion control programs are only those critical lands with an annual soil loss rate of ten or more tons per acre which are located within the delineated priority water quality areas listed below:

The highest priority of concern for the abatement of agricultural pollution within the critical lands is that of the protection and improvement of the region's public water supplies and their attendant watersheds. (Appendix B-2, p. 105)

The second priority of concern within the critical lands is that of the protection and improvement of those waters which constitute primary recreational facilities and/or secondary public water supplies. (Appendix B-2, p. 105)

The third priority of concern within the critical lands is that of the preservation and improvement of high quality waters. (Appendix B-2, p. 105)

The fourth priority of concern within the critical lands is that of correcting areas of locally severe soil erosion impacting year-round flowing streams. (Appendix B-2, p. 105)

The County Soil and Water Conservation Districts shall be designated as management agencies with respect to soil erosion control programs, and shall adopt annual work programs that implement water quality within the priority management areas. (Appendix B-2, pp. 106-107)

The activities of the County Soil and Water Conservation Districts include development of an operations and funding plan and a program of on-going education for agricultural water pollution, especially Best Management Practices re-

lated to fertilizers, pesticides/herbicides and livestock wastes. (Appendix B-2, p. 107)

In addition, the Soil and Water Conservation Districts in cooperation with the Regional Water Quality Council, shall develop an annual evaluation system.

For purposes of achieving the abatement of agricultural pollution within the designated critical, priority areas, the following participation rates by land owners are to be achieved: (Appendix B-2, p. 107)

1979	1- 5%
1980	5-10%
1981	10-20%
1982	20-33%
1983	33-50%

It is recommended that the current system of voluntary measures be continued, subject to annual evaluation. Mandatory programs will be considered, on the basis of annual evaluations which indicate that voluntary programs are not effective in reaching the priority goals. The mandatory programs shall be based upon available state and federal regulatory mechanisms. (Appendix B-2, p. 106)

The Agricultural Stabilization and Conservation Service allocate a minimum of fifty percent (50%) of its annual budget to traditional cost-sharing programs within the designated priority areas. (Appendix B-2, p. 113)

Resources of the Shawnee Resource Conservation and Development Project be allocated by the member Soil and Water Conservation Districts, in order to abate agricultural pollution within the designated priority areas, especially that related to publicly owned lands. (Appendix B-2, p. 113)

The control of feedlots and other concentrated animal production wastes be controlled through existing State National Pollution Discharge Elimination System (NPDES) permits and related regulation promulgated by the Illinois Pollution Control Board. (Appendix B-2, p. 91)

The Soil and Water Conservation Districts negotiate and execute agreements, wherever possible, with the County Agricultural Stablization Conservation Service committees to mutually define specific levels of technical and financial assistance for the implementation of cost-eligible Best Management Practices within priority areas. It is recommended that 90% cost-sharing be sought for application of Best Management Practices to critical erosion areas (those eroding at a rate of 10 tons/acre/year or greater) within the priority areas. (Appendix B-2, pp. 107, 111, 113)

Annual Progress Reviews shall be conducted by the Regional Water Quality Council.

Rural Sewage

It is the recommendation of the Water Quality Management Program that:

The Counties be designated as the management agencies for rural sewage, and that the appropriate county health departments should be the operating agencies for monitoring, permitting and enforcing private sewage disposal systems. (Appendix B-3, p. 25)

The Regional Water Quality Council, in cooperation with Comprehensive Health Planning in Southern Illinois, Inc., support Jefferson and Hamilton Counties in the creation, funding, and organization of county health departments, and the addition of an Environmental Health division within the Perry County Health Department. (Appendix B-3, p. 25)

The county health departments' Environmental Health divisions obtain adequate staffing to do the necessary monitoring, permitting and enforcing of regulations related to private sewage disposal systems. (Appendix B-3, p. 25)

The private sector be encouraged to establish private sewage disposal maintenance services. (Appendix B-3, p. 25)

Specific municipal wastewater treatment facilities be designed with sufficient capacity to accept septage from private sewage disposal maintenance programs, and that equitable charges be instituted for the treatment of these wastes. (Appendix B-3, p. 24)

An educational program for the proper maintenance of private sewage disposal systems be instituted and the program be geared to home-owners, prospective home-owners, contractors, realtors, home loan institutions and maintenance system operators. (Appendix B-3, p. 26)

A training program for building contractors and septic system contractors be instituted, and consideration be given by the appropriate health departments to a septic system certification and/or licensing program for those operators. (Appendix B-3, pp. 25-26)

In those areas adjacent to incorporated municipalities with wastewater treatment facilities, consideration be given to annexation and extension of sewer lines, in order to alleviate rural sewage pollution. In all cases of sewer line extension, there should be written agreements concerning future annexation or other arrangements. (Appendix B-3, p. 26)

In the rural areas of the counties, land use controls be initiated by the Counties to regulate the location and density of development, in order to minimize and/or alleviate the rural sewage problem. The type of private disposal systems and lot sizes should be determined for rural development, based on soil capabilities and other natural characteristics of the Region for on-site disposal of wastewaters. (Appendix B-3, p. 26)

Annual Progress Reviews shall be conducted by the Regional Water Quality Council.

High Quality Water

Public Water Supplies

It is the recommendation of the Water Quality Management Program that:

Public Water Supplies be protected from further degradation and, where possible, be improved in quality, as a first priority of program implementation. (Appendix B-5, p. 31)

In order to protect or improve water supply impoundments in the ten-county designated area, best management practices be established on all agricultural lands in the reservoir watersheds, in order to control siltation and to prevent or diminish entry of pesticides, herbicides, and nutrients (and chemical reaction products of these) into reservoirs along with soil particles. The management of this process should be the reponsibility of County Soil and Water Conservation Districts. (Appendix B-5, p. 31)

Water supply impoundments or river side-channel sources be protected from pollution emanating from mine-waste drainage, from upstream coal mining operations or abandoned mine lands. Water supply watersheds, such as the Saline River upstream of Harrisburg, should have high priority for mine-waste cleanup efforts at old mine and tipple sites. Coal mining should proceed only with extreme caution in watersheds of water supply reservoirs. (Appendix B-5, p. 32)

High water quality standards continue in force for effluents entering streams in water supply watersheds. Suspended solids standards should be established for these watersheds.

County health departments strictly enforce sewage disposal ordinances in housing areas located within water supply watersheds. (Appendix B-5, p. 33)

River Conservancy Districts and other water supply management agencies begin a program to convert larger percentages of the water supply watersheds to forest and grasslands and should, with the aid of appropriate agencies, strictly enforce necessary restrictions on development, industry, mining, or quarrying within the watershed. (Appendix B-5, p. 30)

General Use Waters

It is the recommendation of the Water Quality Management Program that:

Streams and reservoirs having general recreational and/or back-up water supply use be regularly monitored, especially for bacterial counts, phosphorus, nitrogen, heavy metals, pesticides, and other potentially dangerous compounds and mine-waste related parameters. Swimming beaches should be regularly monitored, and standards for beach closure set and enforced at all public beaches. Sediments and fish flesh should be monitored, at recreational impoundments, for mercury, arsenic, lead, and pesticide levels. County Soil and Water Conservation Districts, in cooperation with River Conservancy Districts and other appropriate agencies, should work to bring increasing amounts of acreage in these watersheds under erosion control programs and to provide for appropriate restrictions on housing development, industrial, mining, or quarrying activities. (Appendix B-5, pp. 30,33)

Non-Degradation Waters

It is the recommendation of the Water Quality Management Program that:

The Regional Water Quality Council, in cooperation with the appropriate State of Illinois agency, shall designate certain waters (which are not water supply waters) as non-degradable waters, which will not receive additional polluting effluent or water-borne pollutants from point or nonpoint sources anywhere in the watershed. (Appendix B-5, p. 30)

Such waters not be allowed to accumulate any monitored parameter up to the state-allowed standards, but would be monitored for any deterioration of water quality over the established long-term range. (Appendix B-5, p. 34)

Erosion, organic pollution, and/or other pollutant-producing activities be greatly restricted in these watersheds, in order to preserve the natural habitat and aesthetic qualities and to improve, if possible, water quality toward the achievement of re-establishing waters of nearly pristine quality in the ten-county area. These watersheds would, of necessity, be largely forested, with restricted permanent human habitation and no coal mining, petroleum extraction, or industrial activity. (Appendix B-5, p. 34)

Annual Progress Reviews shall be conducted by the Regional Water Quality Council.

Other Nonpoint Sources

Construction

It is the recommendation of the Water Quality Management Program that:

Control measures applied to transportation development sites follow Best Management Practices which minimize soil exposure, control surface water runoff, shield exposed soil, and/or bind exposed soil. Management agencies to implement these measures should be the Illinois Department of Transportation and the county governments, each for their respective facilities. (Appendix B-1, p. 40)

Control measures applied to residential development sites address the problem of soil erosion during the usually long periods of time when lots are barren and roads are incomplete. Zoning or subdivision ordinances should be used by local governments as a tool to govern location and rate of development. Such ordinances should require that topographic features and erosion potential of soils be taken into account in street construction and lot layout, so as to minimize erosion problems. Timetables for paving and guttering streets and revegetating barren land can be specified. An inventory of soil characteristics in regard to erosion rates should be required, and soil percolation tests taken by health department officials, before development, so that erosion prevention measures and private sewage disposal requirements (where there is no sewerage) should be part of pre-development planning. (Appendix B-1, pp. 39-41)

Annual Progress Reviews shall be conducted by the Regional Water Quality Council.

Fluorspar Mining

It is the recommendation of the Water Quality Management Program that:

The Regional Water Quality Council actively review and comment upon all applications for mining permits requested from the Illinois Environmental Protection Agency (IPCB, Chapter 4; and NPDES), and/or the Illinois Department of Mines and Minerals, particularly with regard to site design, road construction, stockpiling practices, water handling procedures, mine waste disposal, transportation and storage of reagents and related water quality matters. (Appendix B-1, p. 9)

Prospecting permits also be reviewed, in order to assure adequate treatment of drilling waters containing suspended rock particles, and to assure adequate construction and maintenance of access roads, in accordance with practices recommended by the U.S. Forest Service for roads in forested areas, so as to minimize erosion problems. (Appendix B-1, p. 9)

There be continued and strategically located monitoring of water quality in fluorspar mining areas, with emphasis on lead and zinc concentrations (the year-to-year variations in lead and zinc extraction tonnages make any given set of monitoring results non-indicative of possible future levels of these parameters in fluorspar-affected streams). (Appendix B-1, p. 10)

Annual Progress Reviews shall be conducted by the Regional Water Quality Council.

Hydrographic Modifications

It is the recommendation of the Water Quality Management Program that:

A project of public education, based on the latest findings concerning the effects of channel modification, be conducted by County Soil and Water Conservation Districts, in cooperation with the County Extension Service. This should be done in conjunction with such projects as revegetation, bed roughening, and planting of shrubbery and trees wherever feasible along channelized streams, in cooperation with pertinent agencies, citizen groups, and private owners, for purposes of bank stabilization, stream bed shading, and aquatic habitat improvement. (Appendix B-1, p. 58)

Where proven hazards to the public health or to valuable properties justify modifications for flood control, auxilliary channel projects or other alternatives which are less likely to cause upstream degradation be considered, in lieu of channel deepening and widening projects. Where such justification is absent, clear-

ance of the natural channel, without dredging and with minimum disturbance of bank vegetation, should be the only hydrographic modification allowed in the ten-county area. (Appendix B-1, p. 59)

Where channels have been straightened, no activities designed to deepen the channel, to prevent a natural return to meandering, or to mitigate aggradation be permitted, until upstream erosion control measures and bank revegetation along modified portions either are satisfactorily in place or are provided for in specified critical erosion areas of the watershed tributary to the site. Soil and Water Conservation Districts should coordinate with appropriate agencies, with respect to time tables, sequence, and priorities for these activities. (Appendix B-1, p. 59)

Such measures as headwaters and upstream impoundments, sediment traps, structures to hold tributary drainage, and grade stabilization structures be put in place wherever feasible in the watersheds of streams that have been channelized. (Appendix B-1, p. 59)

The appropriate State Agency (Illinois Environmental Protection Agency; Illinois Institute of Natural Resources; and/or Illinois Department of Mines and Minerals) be responsible for monitoring the implementation of surface mine reclamation plans, in order to assure that drainage patterns are in fact being restored after hydrographic modifications have been performed pursuant to mining operations. (Appendix B-1, p. 59)

The Regional Water Quality Council in conjunction with State administrative agencies and the U.S. Army Corps of Engineers, review and comment upon permits issued under Section 404, as amended by Section 67 of the Clean Water Act of 1977, with particular concern addressed to the disposal of dredge and fill materials and implementation of best management practices in watersheds tributary to the site. (Appendix B-1, p. 59)

Annual Progress Reviews shall be conducted by the Regional Water Quality Council.

Petroleum Extraction

It is the recommendation of the Water Quality Management Program that:

Salt water intrusion into ground water supplies, due to oil and gas extraction has been noted as a possible problem in the Region. The precise nature and magnitude of this problem is currently under study by the Illinois Environmental Protection Agency and the Illinois Department of Mines and Minerals. It is recommended that the Regional Water Quality Council continue to monitor the State study and to coordinate with the appropriate regulatory agencies, to take such actions as may be required. (Appendix B-1, p. 22)

Petroleum exploration permits receive review, delineating how those activities would affect water quality. (Appendix B-1, p. 22)

The Regional Water Quality Council, in cooperation with the Soil and Water Conservation Districts, and the Regional Planning Commissions, shall inventory and categorize areas of salt water damage and assess the impact of these areas on water quality, in terms of increased erosion and areas of land barren of vegetation. Special erosion control measures may be needed in Hamilton, Saline, Franklin, and Jefferson Counties. (Appendix B-1, pages 21-22)

Annual Progress Reviews shall be conducted by the Regional Water Quality Council.

Silviculture

It is the recommendation of the Water Quality Management Program that:

Although the impact of silvicultural activities on the water quality of the region is considered to be small, the U.S. Forest Service be designated the management agency for silvicultural activities within the Shawnee National Forest. The major thrust of management practices in the national forest area should be toward education and control/enforcement activities that will assure (1) that access roads be constructed in such a way that acreage of forest cover removed, road bed and ditch erosion, and numbers of stream crossings are all held to a minimum; (2) that over-harvesting of stream-side management zones not be permitted; (3) that stream-side management zones be maintained along all streams; and (4) that recreational vehicle trails be prohibited in stream-side management zones and be permitted to cross streams only at stream crossing roads. The management of silvicultural activities shall promote the recommended Best Management Practices. (Appendix B-1, pages 30-32)

The County Soil and Water Conservation Districts enter into inter-local agreements with the Illinois Division of Forestry, with respect to silvicultural management activities, in those areas within the counties which are not under federal or state ownership. (Appendix B-1, p. 32)

Appropriate activities include educational and voluntary programs related to the recommended Best Management Practices. The major thrust of management practices should be as in items (1) through (4) above. Only selective harvesting, carefully planned to minimize forest floor disturbance, should occur in stream-side management zones. Mandatory programs (based upon available Federal and State regulatory mechanisms) will be considered, on the basis of ineffective voluntary activities. (Appendix B-1, pages 30-32)

Annual Progress Reviews shall be conducted by the Regional Water Quality Council.

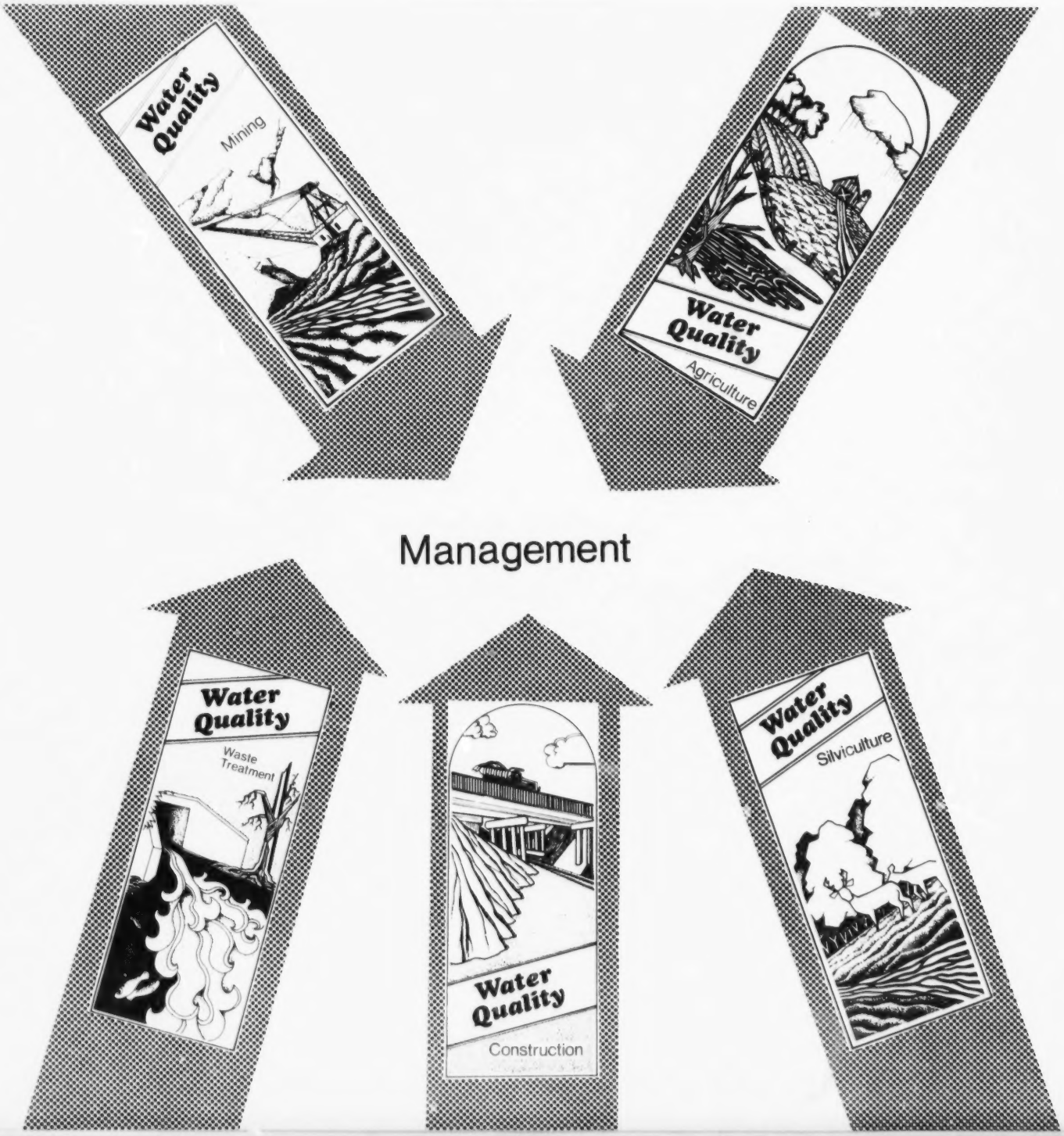
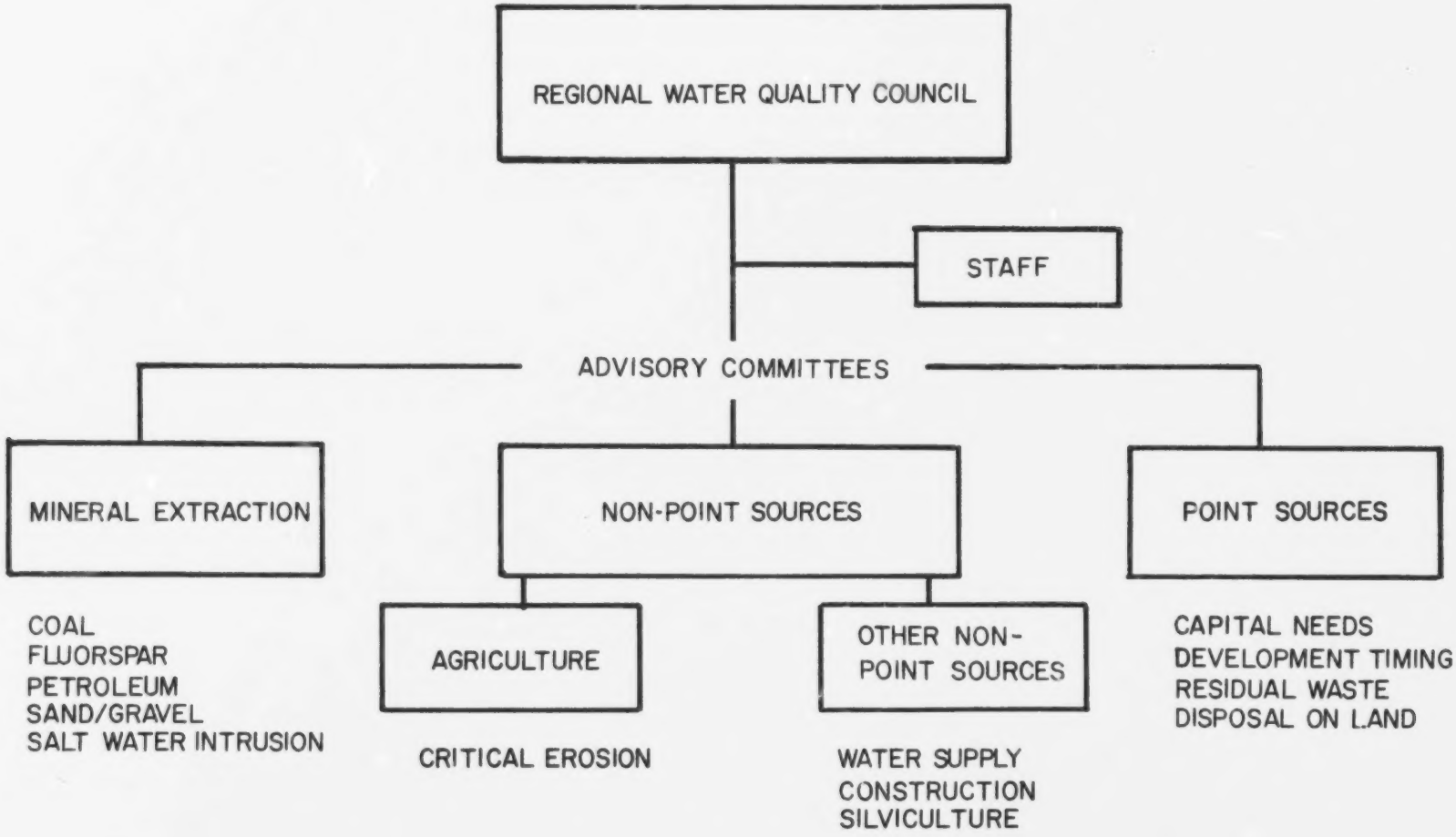

Water Quality
Mining
Water Quality
Agriculture
Management
Water Quality
Waste Treatment
Water Quality
Construction
Water Quality
Silviculture

Figure 6

PROPOSED ORGANIZATIONAL STRUCTURE



Regional Water Quality Council

Recommendation for Regional Water Quality Council

The Greater Egypt Regional Planning and Development Commission and the Southeastern Illinois Regional Planning and Development Commission, acting through their jointly established Regional Water Quality Task Force, recommends to the area's Counties, major municipalities, and Soil and Water Conservation Districts that they mutually create a Regional Water Quality Council. The purpose of the Council is to coordinate the implementation of the 208 areawide plan recommendations while assuring continuation of the 208 areawide planning process.

Membership of Regional Water Quality Council

The membership on the Council is proposed as follows:

1. 208 Area Counties

A. Franklin	C. Hamilton	E. Jackson	G. Perry	I. Saline
B. Gallatin	D. Hardin	F. Jefferson	H. Pope	J. Williamson

2. 208 Area Major Waste Treatment and Water Quality Municipalities

A. Benton	C. DuQuoin	E. Harrisburg	G. Marion	I. Mt. Vernon
B. Carbondale	D. Eldorado	F. Herrin	H. McLeansboro	J. Murphysboro
				K. West Frankfort

3. 208 Area Soil and Water Conservation Districts

A. Franklin	C. Hamilton	E. Jefferson	G. Pope-Hardin	I. Williamson
B. Gallatin	D. Jackson	F. Perry	H. Saline	

4. River Conservancy Districts

A. Kinkaid Reeds Creek Conservancy District	D. Lusk Creek Conservancy District
B. Rend Lake Conservancy District	E. Bay Creek Conservancy District
C. Saline Valley Conservancy District	

The above membership is recommended in that these major agencies have primary responsibility for implementation of the plan recommendations. Other management agencies having a role in the solving the Region's water quality problems are expected to participate in the Council through its advisory committee structure.

Three committees are recommended to be established to fill an advisory role to the council. The advisory committees, functioning in an active role, are necessary to assure full input to the Council's planning process while maximizing coordination of implementation efforts.

These committees are 1) mineral extraction; 2) nonpoint sources; and 3) point sources. They will deal with the 208 area water quality issues as outlined below.

Mineral Extraction Advisory Committee

Coal, fluorspar, petroleum, sand/gravel, and salt water intrusion issues will be dealt with. Membership will include industries involved with these problem areas.

Nonpoint Sources Advisory Committee

This committee will function through two sub-committees: 1) Agriculture and 2) other nonpoint sources. The Agriculture sub-committee will concern itself primarily with critical erosion problems, while the other NonPoint Source sub-committee will be concerned with problems associated with construction, hydrologic modifications, and silviculture (forestry). Membership will include representatives from the above listed water quality problem areas.

Point Sources Advisory Committee

The Committee will be concerned with issues surrounding capital needs, development timing, residual waste, and land disposal systems. Membership will include representatives from point source management agencies.

It should be stressed that the Regional Water Quality Council Advisory Committees will include membership from outside the council membership in order to provide the broadest possible base of input, including public participation. Examples of such members are smaller communities, public health departments, consumer and public interest groups and private interest. Note Figure 6, proposed organizational structure.

Authority of Regional Water Quality Council

The Regional Water Quality Council will draw its authority from the local governments which create it, through the Illinois Intergovernmental Cooperation Act (P.A. 78-785 Chapter 127, paragraphs 741-748, Illinois Revised Statutes). Further, it is recommended that the United States Environmental Protection Agency, the Illinois Environmental Protection Agency, and the Governor of the State of Illinois designate the Regional Water Quality Council as the Areawide Water Quality Management Agency, as authorized under P.L. 92-500, as amended.

Purposes of Regional Water Quality Council

1) To provide an areawide conceptual perspective, rather than an individual management agency perspective;

2) To provide a single voice through which coordination and management can occur;

3) To serve as a catalyst in the receipt and distribution of water quality management information;

4) To monitor area water quality management activities and program implementation;

5) To serve as the central stage through which local management agencies can resolve differences;

6) To be an available mediating board for area agencies to use in establishing criteria or setting priorities for programs and funds;

7) To serve as the central area agency within a network of management agencies responsible for meeting the requirements of P.L. 92-500, Section 208 (c) (2).

Responsibilities of the Regional Water Quality Council

The responsibilities of the Regional Water Quality Council will be as follows:

1) To maintain and revise the areawide waste treatment management plan pursuant to relevant Federal and State statutes and regulations;

2) To coordinate the schedule of treatment works necessary to meet the municipal and industrial wastewater treatment needs of the Region, including construction and funding priorities;

3) To designate, in cooperation with the Soil and Water Conservation Districts, areas of critical erosion, and to monitor periodically the effectiveness of soil erosion control activities within the priority identified water quality areas pursuant to the Areawide Water Quality Management Plan;

4) To coordinate with appropriate federal, state, and local agencies the review of proposed mining and reclamation plans and permits pursuant to Public Law 95-87;

5) To recommend the modification (by means of structural or non-structural activities, as appropriate) of lands which adversely impact the water quality of the region;

6) To monitor the water quality of lakes and streams currently serving as, or proposed to serve as, public water supplies and to coordinate and assist the enforcement of regulations safeguarding such water supplies;

7) To develop and recommend implementation of (in coordination with such federal, state, and/or local agencies as may be appropriate) educational, research, and demonstration programs related to the attainment and maintenance of regional water quality goals, pursuant to the areawide waste treatment management plan.

8) To provide a continuing structure for the presentation of timely information to the public while insuring the participation of the public in policy development.

Powers of the Regional Water Quality Council

The responsibilities listed above for the Regional Water Quality Council will require the Council to have the following powers:

1) To have access to all information, reports, and other data in possession of units of local and state government within the area;

2) To prepare an annual budget and to recommend, from time to time, to the local governmental agencies within the area, the amounts and methods for providing funding for the Regional Water Quality Council;

3) To receive, invest, administer, and expend any funds, grants, services, and/or materials from any source. All such expenditures should be made upon vouchers executed by appropriate officers of the Regional Water Quality Council;

4) To appoint an Executive Secretary and such other employees as it deems necessary, and to engage other contractual personnel as it may require, within the limitation of its budget;

5) To acquire, to use, and to transfer, by sale or otherwise, any real or personal property required in the performance of its appropriate duties and function;

6) To contract with the regional planning and development commissions or other public or private entities for the provision of services;

7) To exercise any other authorities, rights, and privileges necessary or incidental to its operation.

Relationship between Regional Water Quality Council and Regional Planning Commissions

The Regional Water Quality Council would utilize the services of the Greater Egypt Regional Planning and Development Commission and the Southeastern Illinois Regional Planning and Development Commission for any planning and/or technical services or studies it may need to perform.

The Regional Planning and Development Commissions shall perform the following planning activities with and for the Regional Water Quality Council:

1) Perform those functions required of the "continuing planning agency" under P.L. 92-500;

2) Provide staff support and services to the Regional Water Quality Council;

3) Coordinate areawide water quality management planning with other regional planning programs undertaken by the Commissions;

4) Review, comment upon, and coordinate water quality management implementation through use of existing A-95 Regional Clearinghouse and other inter-governmental devices;

5) Perform such technical studies as requested by the Regional Water Quality Council.

Financing of Regional Water Quality Council

Financial support for the Regional Water Quality Council will come from several sources:

1) United States Environmental Protection Agency (75% funding through P.L. 92-500, as amended, Section 208) through FY 1983;

2) Membership of the Regional Water Quality Council;

3) State of Illinois funding to designated sub-state agencies (new legislation may be needed);

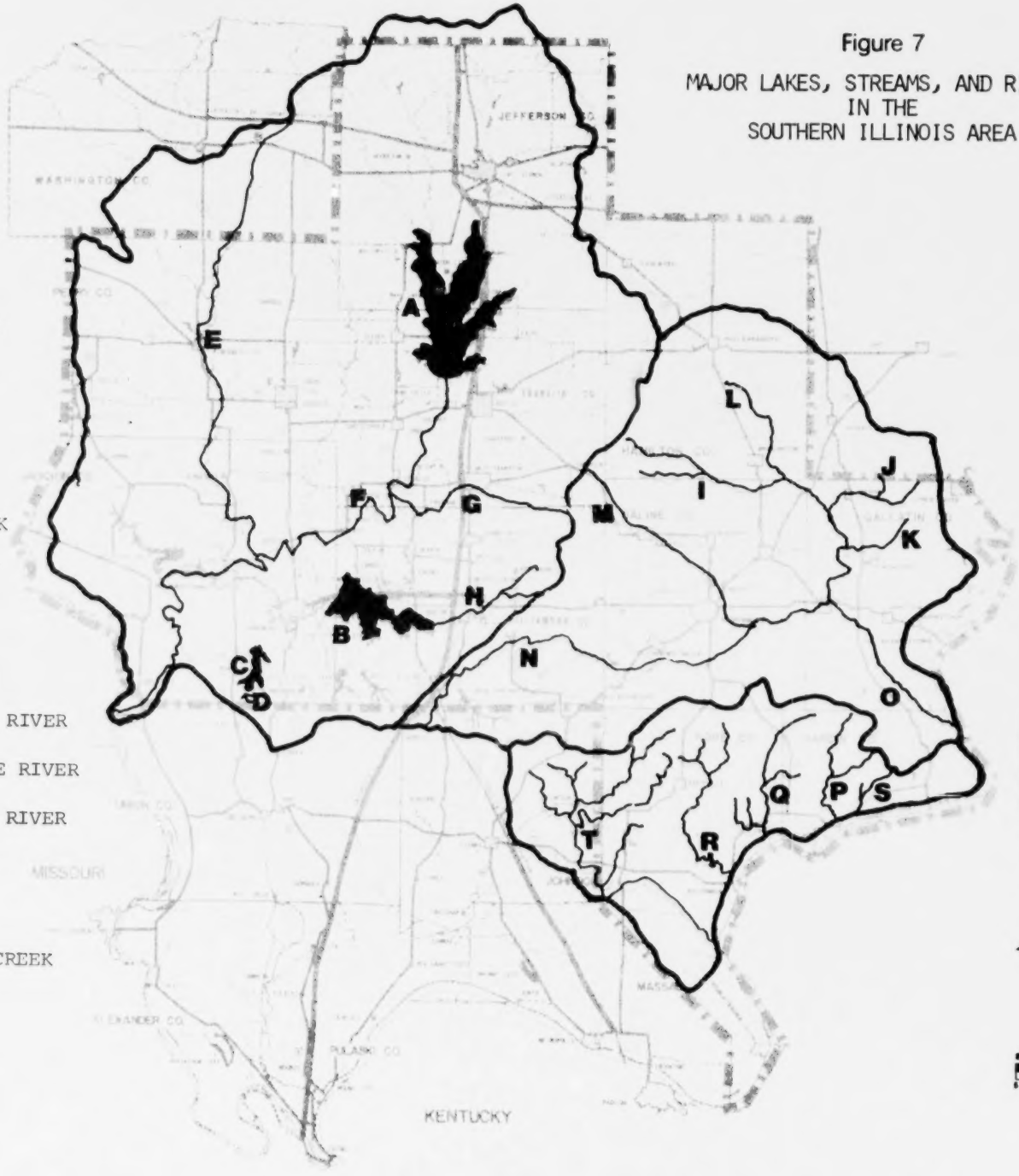
4) Such other public and/or private sources that may be available.

Scheduling to Operationalize the Regional Water Quality Council

The Regional Water Quality Council is scheduled to hold its organizational meetings during the period March 1979 - July 1979, and become functional no later than August, 1979.

Figure 7

MAJOR LAKES, STREAMS, AND RIVERS
IN THE
SOUTHERN ILLINOIS AREA



A REND LAKE

B CRAB ORCHARD LAKE

C CEDAR LAKE

D LITTLE CEDAR LAKE

E BEAUCOUP CREEK

F BIG MUDDY RIVER

G POND CREEK

H CRAB ORCHARD CREEK

I RECTOR CREEK

J CANE CREEK

K CRAWFORD CREEK

L NORTH FORK SALINE RIVER

M MIDDLE FORK SALINE RIVER

N SOUTH FORK SALINE RIVER

O SALINE RIVER

P BIG CREEK

Q BIG GRAND PIERRE CREEK

R LUSK CREEK

S PETERS CREEK

T BAY CREEK

GREATER EGYPT REGIONAL PLANNING & DEVELOPMENT COMMISSION

The preparation of this map was financially aided through Federal Grant No. P005225-01 through the U.S. Environmental Protection Agency under the Water Pollution Control Act Amendments of 1972.

NORTH

scale in miles

Water Quality Plan Recommendations by Management Agencies

REGIONAL WATER QUALITY COUNCIL

COAL MINING

The Regional Water Quality Council serve to provide regional consistency in review and recommendations to the state regulatory agencies.

Research and demonstration projects related to the application of sludge materials as a potential agent for long-term spoil stabilization be actively encouraged by the Regional Water Quality Council.

The Regional Water Quality Council review National Pollution Discharge Elimination System and other permits to be issued by the State of Illinois, including specific water quality monitoring from current and proposed coal mining activities data and other related data.

The Regional Water Quality Council, together with the Regional Planning and Development Commissions and other appropriate agencies, undertake an analysis of potential water quality impact of large energy conversion facilities.

Annual Progress Reviews shall be conducted by the Regional Water Quality Council.

POINT SOURCES

The Priority Ranking and Capital Scheduling identified in the Municipal Wastewater Needs and Capital Scheduling Report (1978) be pursued as the major guide for the scheduling and funding of the municipal facilities within the 208 area.

The Regional Water Quality Council develop a plan to utilize the sludge generated from wastewater treatment facilities in reclaiming coal mined land of the 208 area.

The Regional Water Quality Council identify the ultimate sludge and septage disposal sites. The Council should also identify mined lands reclamation sites for consideration in sludge application for long-term spoil and refuse stabilization.

Expansion and enforcement of the existing regulation related to sludge management (including residue from septic tank cleaning) be reviewed by the Regional Water Quality Council. The ultimate sludge disposal sites for such uses as sanitary landfill, soil conditioning, and lagooning should be monitored, to protect the quality of surface water and ground water.

Annual Progress Reviews shall be conducted by the Regional Water Quality Council.

AGRICULTURE

Annual Progress Reviews shall be conducted by the Regional Water Quality Council with the Soil and Water Conservation Districts.

RURAL SEWAGE

The Regional Water Quality Council, in cooperation with Comprehensive Health Planning in Southern Illinois, Inc., support Jefferson and Hamilton Counties in the creation, funding, and organization of county health departments.

Annual Progress Reviews shall be conducted by the Regional Water Quality Council.

HIGH QUALITY WATERS

The Regional Water Quality Council, in cooperation with the appropriate State of Illinois agency shall designate certain waters which are not water supply waters as non-degradable waters, which should receive no additional polluting effluent or water-borne pollutants from point or nonpoint sources anywhere in the watershed.

Annual Progress Reviews shall be conducted by the Regional Water Quality Council.

CONSTRUCTION

Annual Progress Reviews shall be conducted by the Regional Water Quality Council.

FLUORSPAR MINING

The Regional Water Quality Council actively review and comment upon all applications for mining permits requested from the Illinois Environmental Protection Agency (IPCB, Chapter 4; and NPDES), and/or the Illinois Department of Mines and Minerals, particularly with regard to site design, road construction, stockpiling practices, water handling procedures, mine waste disposal, transportation and storage of reagents, and related water quality matters.

Prospecting permits also be reviewed, in order to assure adequate treatment of drilling waters containing suspended rock particles, and to assure adequate construction and maintenance of access roads, in accordance with practices recommended by the U.S. Forest Service for roads in forested areas, so as to minimize erosion problems.

Annual Progress Reviews shall be conducted by the Regional Water Quality Council.

HYDROGRAPHIC MODIFICATIONS

The Regional Water Quality Council, in conjunction with State administrative agencies and the U.S. Army Corps of Engineers, review and comment upon permits issued under Section 404, as amended by Section 67 of the Clean Water Act of 1977, with particular concern addressed to the disposal of dredge and fill materials and implementation of best management practices in watersheds tributary to the site.

Annual Progress Reviews shall be conducted by the Regional Water Quality Council.

PETROLEUM EXTRACTION

The Regional Water Quality Council continue to monitor the State study and to coordinate with the appropriate regulatory agencies, to take such actions as may be required.

Petroleum exploration permits receive similar review, delineating how those activities would affect water quality.

The Regional Water Quality Council, in cooperation with the Soil and Water Conservation Districts and the Regional Planning Commissions, shall inventory and categorize areas of salt water damage and assess the impact of these areas on water quality, in terms of increased erosion and areas of land barren of vegetation. Special erosion control measures may be needed in Hamilton, Saline, Franklin, and Jefferson Counties.

Annual Progress Reviews shall be conducted by the Regional Water Quality Council.

SILVICULTURE

Annual Progress Reviews shall be conducted by the Regional Water Quality Council.

COUNTIES

COAL MINING

The local review process for the surface mine control act rest with municipal and county governments as management agencies, and that they utilize such staff resources as they have traditionally relied upon. Considerations of additional staff resources should be made through P.L. 95-87 and the existing Regional Planning Commissions.

Designation of lands unsuitable for coal mining be made, by municipalities and counties, to the Illinois

Department of Mines and Minerals. Lands so designated shall be (1) those for which mining land use is incompatible with existing land use plans; or (2) fragile or historic lands in which mining could result in significant damage to important historical, cultural, scientific, and aesthetic values and natural systems; or (3) prime agricultural lands providing significant supplies of food and/or fiber (or constituting aquifer recharge areas); or (4) natural hazard areas, such as areas subject to frequent flooding or geologic instability; or (5) watersheds of streams or impoundments designated by the Regional Water Quality Council and/or appropriate State agencies as "non-degradation waters."

The preparation and implementation of land use plans and land use controls be the basis of local action for the coal mine regulatory process.

RURAL SEWAGE

The Counties be designated as the management agencies for rural sewage, and that the appropriate county health departments be the operating agencies for monitoring, permitting, and enforcing private sewage disposal systems.

The Regional Water Quality Council, in cooperation with Comprehensive Health Planning in Southern Illinois, Inc., support Jefferson and Hamilton Counties in the creation, funding, and organization of county health departments and the addition of an Environmental Health division within the Perry County Health Department.

The county health departments' Environmental Health divisions obtain adequate staffing to do the necessary monitoring, permitting, and enforcing of regulations related to private sewage disposal systems.

The private sector be encouraged to establish private sewage disposal maintenance services.

Specific municipal wastewater treatment facilities be designed with sufficient capacity to accept septage from private sewage disposal maintenance programs, and that equitable charges be instituted for the treatment of these wastes.

An educational program for the proper maintenance of private sewage disposal systems be instituted and the program be geared to home-owners, prospective home-owners, contractors, realtors, home loan institutions, and maintenance system operators.

A training program for building contractors and septic system contractors be instituted, and consideration be given by the appropriate health departments to a septic system certification and/or licensing program for those operators.

In those areas adjacent to incorporated municipalities with wastewater treatment facilities, consideration be given to annexation and extension of sewer lines, in order to alleviate rural sewage pollution. In all cases of sewer line extension, there should be written agreements concerning future annexation or other

arrangements.

In the rural areas of the counties, land use controls be initiated by the Counties to regulate the location and density of development, in order to minimize and/or alleviate the rural sewage problem. The type of private disposal systems and lot sizes should be determined for rural development, based on soil capabilities and other natural characteristics of the Region for on-site disposal of wastewaters.

HIGH QUALITY WATER (PUBLIC WATER SUPPLIES)

County health departments strictly enforce sewage disposal ordinances in housing areas located within water supply watersheds.

CONSTRUCTION

Control measures applied to transportation development sites follow Best Management Practices which minimize soil exposure, control surface water runoff, shield exposed soil, and/or bind exposed soil. Management agencies to implement these measures should be the Illinois Department of Transportation and the county governments, each for their respective facilities.

Control measures applied to residential development sites address the problem of soil erosion during the usually long periods of time when lots are barren and roads are incomplete. Zoning or subdivision ordinances should be used by local governments as a tool to govern location and rate of development. Such ordinances should require that topographic features and erosion potential of soils be taken into account in street construction and lot layout, so as to minimize erosion problems. Timetables for paving and guttering streets and revegetating barren land can be specified. An inventory of soil characteristics in regard to erosion rates should be required, and soil percolation tests taken by health department officials, before development, so that erosion prevention measures and private sewage disposal requirements (where there is no sewerage) should be part of pre-development planning.

MUNICIPALITIES

COAL MINING

The local review process for the surface mine control act should rest with municipal and county governments as management agencies, and they should utilize such staff resources as they have traditionally relied upon. Considerations of additional staff resources should be made through P.L. 95-87 and the existing Regional Planning Commissions.

Designation of lands unsuitable for coal mining be made, by municipalities and counties, to the Illinois

Department of Mines and Minerals. Lands so designated shall be (1) those for which mining land use is incompatible with existing land use plans; or (2) fragile or historic lands in which mining could result in significant damage to important historical, cultural, scientific, and aesthetic values and natural systems; or (3) prime agricultural lands providing significant supplies of food and/or fiber (or constituting aquifer recharge areas); or (4) natural hazard areas, such as areas subject to frequent flooding or geologic instability; or (5) watersheds of streams or impoundments designated by the Regional Water Quality Council and/or appropriate State agencies as "non-degradation waters."

The preparation and implementation of land use plans and land use controls be the basis of local action for the coal mine regulatory process.

POINT SOURCES

The municipalities and selected water districts be designated as the management agencies for their respective service areas as identified in (1) the individual Sec. 201 facility plans; and (2) the individual municipal wastewater needs analysis studies.

The Regional Water Quality Council, in cooperation with the management agencies, conduct an evaluation of those facilities interpreted as being "implemented" during the first year of the continuing planning program, for purposes of: (1) evaluating the effectiveness of meeting effluent and stream water quality standards; (2) evaluating the effectiveness of resolving the original water quality and/or service area problems; (3) identifying any water quality or system problems which may have occurred during the implementation process; (4) developing solutions and plan modifications to resolve operational or unknown loading problems; and (5) conducting the annual planning update.

Land use controls through zoning ordinances and subdivision ordinances be enacted and implemented by the municipal management agencies, up to 1½ miles from their corporate boundaries, in order to align growth patterns which are compatible with major interceptor and trunk line extension scheduling.

The water treatment plan discharges be controlled and disposed of properly. The management agency should comply with the National Pollution Discharge Elimination System permit limitation.

Private wastewater treatment facilities be upgraded so that they can meet the State effluent requirements. Regionalization potential also should be explored, in order to reduce the number of discharges in the region.

Sewer service not be extended outside the existing municipal boundaries, without annexation or intergovernmental agreement with the responsible agency.

The management agencies operate the wastewater facilities to their maximum efficiency. Operators' training, conservation practices, and regulatory programs should be developed, to assure that proper operation and

maintenance requirements of the system will be fulfilled.

A thorough investigation be performed in order to evaluate the technical and implementation feasibilities of on-site disposal alternatives, such as mound systems, in the area's municipalities and rural areas.

Those municipalities which are not on Illinois Environmental Protection Agency's FY 77 priority list apply for 201 grants. These applications should be updated each year, regardless of grant status.

RURAL SEWAGE

Specific municipal wastewater treatment facilities be designed with sufficient capacity to accept septage from private sewage disposal maintenance programs, and that equitable charges be instituted for the treatment of these wastes.

CONSTRUCTION

Control measures applied to residential development sites address the problem of soil erosion during the usually long periods of time when lots are barren and roads are incomplete. Zoning or subdivision ordinances should be used by local governments as a tool to govern location and rate of development. Such ordinances should require that topographic features and erosion potential of soils be taken into account in street construction and lot layout, so as to minimize erosion problems. Timetables for paving and guttering streets and revegetating barren land can be specified. An inventory of soil characteristics in regard to erosion rates should be required, and soil percolation tests taken by health department officials, before development, so that erosion prevention measures and private sewage disposal requirements (where there is no sewerage) should be part of pre-development planning.

SOIL AND WATER CONSERVATION DISTRICTS

AGRICULTURE

The County Soil and Water Conservation Districts be designated as management agencies with respect to soil erosion control programs and shall adopt annual work programs that implement water quality within the priority management areas.

The activities of the County Soil and Water Conservation Districts include development of an operations and funding plan and a program of on-going education for agricultural water pollution, especially Best Management Practices related to fertilizers, pesticides/herbicides, and livestock wastes.

In addition, the Soil and Water Conservation Districts in cooperation with the Regional Water Quality

Council, develop an annual evaluation system.

Resources of the Shawnee Resource Conservation and Development Project be allocated by the member Soil and Water Conservation Districts, in order to abate agricultural pollution within the designated priority areas, especially that related tp publicly owned lands.

The Soil and Water Conservation Districts negotiate and execute agreements wherever possible, with the County Agricultural Stablization Conservation Service committees to mutually define specific levels of technical and financial assistance for the implementation of cost-eligible Best Management Practices within priority areas. It is recommended that 90% cost-sharing be sought for application of Best Management Practices to critical erosion areas (those eroding at a rate of 10 tons/acre/year or greater) within the priority areas.

HIGH QUALITY WATERS (PUBLIC WATER SUPPLIES)

In order to protect or improve water supply impoundments in the ten-county designated area, best management practices be established on all agricultural lands in the reservoir watersheds, in order to control siltation and to prevent or diminish entry of pesticides, herbicides, and nutrients (and chemical reaction products of these) into reservoirs along with soil particles. The management of this process should be the responsibility of County Soil and Water Conservation Districts.

HIGH QUALITY WATER (GENERAL USE WATERS)

County Soil and Water Conservation Districts, in cooperation with River Conservancy Districts and other appropriate agencies, should work to bring increasing amounts of acreage in these watersheds under erosion control programs and to provide for appropriate restrictions on housing development, industrial, mining, or quarrying activities.

HYDROGRAPHIC MODIFICATIONS

A project of public education, based on the latest findings concerning the effects of channel modification, be conducted by County Soil and Water Conservation Districts, in cooperation with the County Extension Service. This should be done in conjunction with such projects as revegetation, bed roughening, and planting of shrubbery and trees wherever feasible along channelized streams, in cooperation with pertinent agencies, citizen groups, and private owners, for purposes of bank stabilization, stream bed shading, and aquatic habitat improvement.

Where channels have been straightened, no activities designed to deepen the channel, to prevent a natural return to meandering, or to mitigate aggradation be permitted, until upstream erosion control measures and bank revegetation along modified portions either are satisfactorily in place or are provided for in specified critical erosion areas of the watershed tributary to the site. Soil and Water Conservation Districts should coordinate with appropriate agencies, with respect to timetables, sequence, and priorities for these activities.

Such measures as headwaters and upstream impoundments, sediment traps, structures to hold tributary drainage, and grade stabilization structures be put in place wherever feasible in the watersheds of streams that have been channelized.

SILVICULTURE

The County Soil and Water Conservation Districts enter into inter-local agreements with the Illinois Division of Forestry, with respect to silvicultural management activities, in those areas within the counties which are not under federal or state ownership.

RIVER CONSERVANCY DISTRICTS

HIGH QUALITY WATER (PUBLIC WATER SUPPLY)

River Conservancy Districts and other water supply management agencies begin a program to convert larger percentages of the water supply watersheds to forest and grasslands and with the aid of the aid of appropriate agencies, strictly enforce necessary restrictions on development, industry, mining, or quarrying within the watershed.

HIGH QUALITY WATER (GENERAL USE WATERS)

County Soil and Water Conservation Districts, in cooperation with River Conservancy Districts and other appropriate agencies, work to bring increasing amounts of acreage in these watersheds under erosion control programs and to provide for appropriate restrictions on housing development, industrial, mining, or quarrying activities.

PUBLIC WATER DISTRICTS

POINT SOURCES

The municipalities and selected water districts be designated as the management agencies for their respective service areas as identified in (1) the individual Sec. 201 facility plans; and (2) the individual municipal wastewater needs analysis studies.

The Regional Water Quality Council, in cooperation with the management agencies, conduct an evaluation of

those facilities interpreted as being "implemented" during the first year of the continuing planning program, for purposes of: (1) evaluating the effectiveness of meeting effluent and stream water quality standards; (2) evaluating the effectiveness of resolving the original water quality and/or service area problems; (3) identifying any water quality or system problems which may have occurred during the implementation process; (4) developing solutions and plan modifications to resolve operational or unknown loading problems; and (5) conducting the annual planning update.

The water treatment plan discharges be controlled and disposed of properly. The management agency should comply with the National Pollution Discharge Elimination System permit limitation.

The management agencies operate the wastewater facilities to their maximum efficiency. Operators' training, conservation practices, and regulatory programs should be developed, to assure that proper operation and maintenance requirements of the system will be fulfilled.

ABANDONED MINED LANDS RECLAMATION COUNCIL

COAL MINING

Application shall be made for funds for reclamation demonstration projects and water quality monitoring under P.L. 95-87.

ILLINOIS DEPARTMENT OF TRANSPORTATION

CONSTRUCTION

Control measures applied to transportation development sites follow Best Management Practices which minimize soil exposure, control surface water runoff, shield exposed soil, and/or bind exposed soil. Management agencies to implement these measures should be the Illinois Department of Transportation and the county governments, each for their respective facilities.

ILLINOIS DEPARTMENT OF MINES AND MINERALS

COAL MINING

The appropriate State agency (Illinois Environmental Protection Agency; Illinois Department of Mines and

Minerals; and/or Illinois Institute of Natural Resources) provide adequate water quality monitoring so as to ensure compliance (or identify non-compliance) with existing water quality standards (Illinois Pollution Control Board, Chapters 3 and 4), regulations pursuant to P.L. 95-87, and the applicable terms and conditions of the mining permit.

ILLINOIS DEPARTMENT OF CONSERVATION

SILVICULTURE

The County Soil and Water Conservation Districts enter into inter-local agreements with the Illinois Division of Forestry, with respect to silvicultural management activities, in those areas within the counties which are not under federal or state ownership.

Appropriate activities include educational and voluntary programs related to the recommended Best Management Practices. Only selective harvesting, carefully planned to minimize forest floor disturbance, should occur in stream-side management zones. Mandatory programs (based upon available Federal and State regulatory mechanisms) will be considered, on the basis of ineffective voluntary activities.

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

MINING

The appropriate State agency (Illinois Environmental Protection Agency; Illinois Department of Mines and Minerals; Illinois Institute of Natural Resources) provide adequate water quality monitoring so as to ensure compliance (or identify non-compliance) with existing water quality standards (Illinois Pollution Control Board, Chapters 3 and 4), regulations pursuant to P.L. 95-87, and the applicable terms and conditions of the mining permit.

POINT SOURCES

Mine discharges be monitored periodically, to evaluate the impact on regional waters. After thorough investigation, a separate plan for point sources mine discharges should be developed and implemented.

AGRICULTURE

The control of feedlots and other concentrated animal production wastes be controlled through existing State

National Pollution Discharge Elimination System (NPDES) permits and related regulation promulgated by the Illinois Pollution Control Board.

FLUORSPAR

There be continued and strategically located monitoring of water quality in fluorspar mining areas, with emphasis on lead and zinc concentrations.

HYDROGRAPHIC MODIFICATIONS

The appropriate State Agency (Illinois Environmental Protection Agency; Illinois Institute of Natural Resources; Illinois Department of Mines and Minerals) be responsible for monitoring the implementation of surface mine reclamation plans, in order to assure that drainage patterns are in fact being restored after hydrographic modifications have been performed pursuant to mining operations.

ILLINOIS INSTITUTE OF NATURAL RESOURCES

COAL MINING

The Illinois Institute of Natural Resources be requested by the Regional Water Quality Council to conduct research designed to find innovative and more cost effective ways to deal with such severe acid mine waste drainage as is found in the lower South Fork of the Saline River Basin.

HYDROGRAPHIC MODIFICATIONS

The appropriate State Agency (Illinois Environmental Protection Agency; Illinois Institute of Natural Resources Illinois Department of Mines and Minerals) be responsible for monitoring the implementation of surface mine reclamation plans, in order to assure that drainage patterns are in fact being restored after hydrographic modifications have been performed pursuant to mining operations.

ILLINOIS POLLUTION CONTROL BOARD

POINT SOURCES

Realistic effluent standards be established by the Illinois Pollution Control Board for several parameters (fecal coli, Biochemical Oxygen Demand, suspended solids, iron, and ammonia nitrogen) for 7-day, 10-year, zero flow streams. The Illinois Environmental Protection Agency's proposed effluent standards may be beneficial to the area's communities in meeting the State effluent requirements.

U.S. FOREST SERVICE (USDA)

SILVICULTURE

Although the impact of silvicultural activities on the water quality of the region is considered to be small, the U.S. Forest Service be designated the management agency for silvicultural activities within the Shawnee National Forest. The major thrust of management practices in the national forest area should be toward education and control/enforcement activities that will assure (1) that access roads be constructed in such a way that acreage of forest cover removed, road bed and ditch erosion, and numbers of stream crossings are all held to a minimum; (2) that over-harvesting of stream-side management zones not be permitted; (3) that stream-side management zones be maintained along all streams; and (4) that recreational vehicle trails be prohibited in stream-side management zones and be permitted to cross streams only at stream crossing roads. The management of silvicultural activities shall promote the recommended Best Management Practices.

U.S. ARMY CORPS OF ENGINEERS

HYDROGRAPHIC MODIFICATIONS

The Regional Water Quality Council, in conjunction with State administrative agencies and the U.S. Army Corps of Engineers, review and comment upon permits issued under Section 404, as amended by Section 67 of the Clean Water Act of 1977, with particular concern addressed to the disposal of dredge and fill materials and implementation of best management practices in watersheds tributary to the site.

AGRICULTURAL STABILIZATION AND CONSERVATION SERVICE (USDA)

AGRICULTURE

The Agricultural Stabilization and Conservation Service should allocate a minimum of fifty percent (50%) of its annual budget to traditional cost-sharing programs within the designated priority areas.

Water Quality Program Costs

Table 4

SOUTHERN ILLINOIS 208 WATER QUALITY PROGRAM
SUMMARY OF PROGRAM COSTS
(Millions of Dollars, 1978)

	Phase I 1978-1983 $	Funding Source	Phase II 1984-1995 $	Funding Source	Total $	Funding Source
Mining						
(a) Reclamation	(a) 4.5	Ill. Abandoned Mine Lands Council, Office of Surface Mining	6.7	Ill. Abandoned Mine Lands Council, Office of Surface Mining	11.2	Ill. Abandoned Mine Lands Council, Office of Surface Mining
(b) Demonstration Projects	(b) 1.4		3.6		5.0	
Total	5.9		10.3		16.2	
Point Sources	42.49	USEPA Grant	5.23	USEPA Grant	47.72	USEPA Grant
Municipal Wastewater Treatment Systems	3.57	IEPA Grant	0.00	IEPA Grant	3.57	IEPA Grant
	.42	FmHA Grant	0.00	FmHA Grant	.42	FmHA Grant
	3.76	FmHA Loan	1.75	FmHA Loan	5.51	FmHA Loan
	10.81	Local	0.00	Local	10.81	Loan
Total	61.05		6.98		68.03	
Residual Wastes	Direct Program Costs Included Elsewhere		Direct Program Costs Included Elsewhere		Direct Program Costs Included Elsewhere	
Agriculture	4.93	USDA/SCS/ASCS	6.96	USDA/SCS/ASCS	11.89	USDA/SCS/ASCS
Erosion Control	.87	Local (Private)	1.74	Local (Private)	2.61	Local (Private)
Total	5.80		8.70		14.50	
Rural Sewage	.10	Ill. Dept. of Public Health	.4	Ill. Dept. of Public Health	.50	Ill. Dept. of Public Health
(Non-structural Controls)	.51	Local	1.8	Local	2.31	Local
Total	.61		2.2		2.81	
High Quality Water	Direct Program Costs Included Elsewhere		Direct Program Costs Included Elsewhere		Direct Program Costs Included Elsewhere	
Other Non-Point Sources	Direct Program Costs Included Elsewhere		Direct Program Costs Included Elsewhere		Direct Program Costs Included Elsewhere	
Construction						
Flurospar Mining						
Hydrographic Modifications						
Petroleum Extraction						
Silviculture						
Management	.586	USEPA			.586	USEPA
Continuing Planning Process	.08	Other Federal Agencies	1.53	Federal Agencies	1.61	Other Federal Agencies
	.17	IEPA	.61	IEPA	.78	IEPA
	.105	Other State Agencies	.38	Other State Agencies	.485	Other State Agencies
	.09	Local	.30	Local	.39	Local
Total	1.031		2.82		3.851	
Totals	56.766	Federal	22.17	Federal	78.936	Federal
	5.345	State	4.99	State	10.335	State
	12.28	Local	3.84	Local	16.120	Local
Total	74.391		31.00		105.391	

Continuing Planning Process

Throughout the development of this initial planning program, it has been apparent that a continuing planning process is necessary. A great many of the recommendations for the various management agencies incorporate the continued monitoring of water quality, and evaluation of the efforts to address the water quality problem.

The Water Quality Management Council is recommended as the oversight body to carry out this continuing planning process. As this cyclical planning process continues, feedback from water quality monitoring efforts will provide information as to the efficacy of the increased and coordinated management efforts. These continuing planning efforts, including specialized studies, should indicate success through the slowing of the degradation of area waters, and hopefully, the improvement of the area's waters. Conversely, contrary indications could direct future efforts toward more stringent controls, different activities and/or more concentrated actions.

The Regional Water Quality Council is recommended as the agency to carry on these activities, in that it incorporates the major management agencies for the region, and allows for the development of an areawide perspective on the interrelated approaches to the enhancement of the water quality of the area.

For example, representatives of the entities consuming drinking water from area surface water supply reservoirs must be planning together with the entities that control land uses in the reservoir watersheds, as well as those that are addressing non-point pollution sources within the watershed. The Regional Water Quality Council provides such an areawide vehicle for continuing planning efforts for the enhancement of water quality within the Southern Illinois 208 area.

It should be noted that the Environmental Assessment (Appendix F), while indicating that environmental degradation may continue within the Southern Illinois 208 area (at least in the immediate future), despite the implementation of the plan recommendations, it is felt that the implementation of the plan recommendations will lessen the rate of degradation. In the long run, these efforts are expected to result in an overall improvement in the area's water quality.

However, in order to maximize the implementation efforts, an areawide continuing process of monitoring, evaluation and plan refinement must continue at the local government level.

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as of November 1978

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